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Traffic Engineering

OFFICIAL PUBLICATION OF THE INSTITUTE OF TRAFFIC ENGINEERS

VOLUME XXIII | NOVEMBER, 1952 | NUMBER 2

COVER: This beautiful view pictures traffic and mass transit operations on one of the most famous of the historic streets of America. The trolley tracks—local service on outer, express on inside tracks—are carried on the bridge covering the drainage canal that gives Canal Street its name. This canal is but one of an elaborate system of canals made necessary by the level of the Mississippi River—visible in the background—being higher than many areas of the City. Surface drainage and sewerage must be pumped out.

Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways, and abutting lands, and with traffic operation thereon, as their use is related to the safe, convenient, and economic transportation of persons and goods.

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Frankly Speaking

THIS IS AN opportunity for me to thank the Board of Direction for their helpfulness and counsel, to thank the splendid men who donated so generously of their time, talents and energies on technical committees and have thus helped to raise traffic engineering standards and the prestige of the Institute. Let me also thank the entire membership for its grand response which made the past year a productive one for the Institute.

At its 23rd Annual Meeting, the Institute of Traffic Engineers participated in and was a part of the great Centennial Convocation honoring the founding of the American Society of Civil Engineers. The Institute's banner flew as high as that of any of the engineering societies that participated. Institute members could well be proud of the fact that in less than a quarter century of the Institute's existence, its members, too, had made definite contributions, transportation-wise, to the life, economy and recreation of the many communities throughout this great land of ours. The Institute has now established itself as one of the many recognized professional engineering societies.

There are, at the present moment, vast street and highway improvement programs as well as urban expressways, bridges and tunnels which are belatedly getting under way. Even though most of them will require considerable financial muscle to achieve, many of these projects may be realized in the foreseeable future. Nevertheless, under the most optimistic achievements, existing traffic-controlled streets and highways will continue to be needed for some time to come as essential supplements to carry the large volumes of local traffic circulation. Consequently, traffic engineers must continue to keep traffic flowing safely and expeditiously on existing streets and highways with constantly improved and modernized ingenious traffic-control devices, attuned to the ever-mounting traffic volumes.

We must realize, however, that traffic engineering is still a young profession. It needs continual and considerable experimentation. As traffic engineers, we must acquire the courage to make mistakes. Only he who does nothing makes no mistakes and so makes the biggest mistake of all. Trial and error is still a powerful tool for achieving technical improvements.

We must ever be mindful of the fact, too, that the results of traffic engineering impinge at once upon human beings and that consequently, pedestrian and motorist approval must always be the acid test of good traffic engineering. A perfect traffic engineering solution, from an engineering standpoint, which is not well received by the public, should be considered a failure. It takes its place alongside that famous operation by an eminent surgeon, pronounced a huge success by the medical profession where, unfortunately, the patient died.

The successful application of traffic engineering solutions to vexing traffic problems is a practical demonstration of a unique ability to attack effectively and cure many other ills that bedevil modern communities. Consequently, traffic engineers will never be mass produced and the demand for successful traffic engineers will always be far in excess of supply. In the future, communities will not, for long, permit successful traffic engineers to continue to practice only traffic engineering. They will give them other more complex assignments. In time, more and more successful traffic engineers will cease to practice traffic engineering only. They will be named commissioners, deputies, consultants, public executives. Successful traffic engineers will be among the respected civic-minded citizens in their communities.

I am humbly proud to have had the opportunity to serve this growing and forward-looking technical society as its President in the year just past.

Immediate Past President

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the simple street operation of automatically dumping the money into the pneumatic-tired coin collector safe.

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Pedestrian Signalization and Control

By Walter E. Schwanhausser, Jr. (Assoc. Mem., ITE)
Illuminating Laboratory, General Electric Company, West Lynn, Massachusetts

Don't walk. Run! Yes, so often the poor pedestrian is the forgotten man when an intersection is signalized. As a result, it takes a good broken field runner to get across some of our streets. Anyone less agile is at a most serious disadvantage. Fortunately for the pedestrians, and strange as it may seem, the saturation of our streets by motor vehicle traffic has finally forced greater and rightful consideration of the pedestrian.

General Methods

ESSENTIALLY there are three methods of providing for pedestrian movements at signalized intersections, namely, by combined, exclusive, and semi-exclusive phases. The most common method is generally referred to as the combined movement where pedestrians cross the street "with the green light." In some cases a separate signal is provided which will indicate in one form or another the most desirable time for a pedestrian to use the cross walk. In other words, the signal system is so designed that an adequate pedestrian clearing interval is provided. The relatively short three- to four-second yellow warning interval provided for motorists is almost always inadequate for pedestrians. Furthermore, it is inadvisable to lengthen the yellow vehicular clearing interval just to accommodate pedestrians. Such a scheme will only tend to encourage motorists to over-run the yellow signal.

The second method of pedestrian phasing is commonly known as the exclusive interval. Pedestrians are allowed to cross the intersection in all directions during such an interval because all of the vehicular traffic is halted. The exclusive pedestrian interval can be included on a regular pre-timed basis each cycle, or if the control equipment is so designed, it can be included only upon actuation of a pedestrian pushbutton.

The third method of pedestrian phasing is what many choose to call the "semi-exclusive" interval. As the name implies, it is partially exclusive in that parallel streams of vehicular and pedestrian traffic are allowed to move simultaneously. During the allotted pedestrian interval, vehicular turning movements are restricted through signalization thereby providing reasonable protection to the pedestrians. Semi-exclusive pedestrian phases are provided on a pre-timed repetitive type of sequence.

Consideration For Types of Pedestrian Phasing

1. Character of Conflict

Obviously, before one can decide just what type of phasing is most desirable, he must become acquainted with the character of the conflict between motorists and pedestrians. For instance, is it right or left-hand turns or both that are causing the conflict between pedestrians and motorists? Furthermore, are only a few vehicles involved, or just a few pedestrians? In other words, specifically, what is the problem?

SPECIAL VEHICLE & PEDESTRIAN CONTROL
SEMI-EXCLUSIVE PEDESTRIAN INTERVAL

INT. NO.	INT. SEC.	COLOR SEQUENCE MAIN ST. VEH.	MAIN ST. PED.	CROSS ST. VEH.	CROSS ST. PED.	TRAFFIC FLOW
I	10	R ↑	WALK	R	WAIT	
II	7	R ↑	WAIT	R	WAIT	
III	10	G	WAIT	R	WAIT	
IV	3	Y	WAIT	R	WAIT	
V	10	R	WAIT	R ↑	WALK	
VI	7	R	WAIT	R ↑	WAIT	
VII	10	R	WAIT	G	WAIT	
VIII	3	R	WAIT	Y	WAIT	

Fig. 1

2. Width of Streets

One must consider the width of the roadways before he can intelligently select the most desirable type of sequence. The primary purpose is to determine the time it will take a pedestrian to cross the street. Secondly, one must consider the roadway width for vehicular lane capacity or the ability to segregate the through movement of traffic from the turning movements. A third consideration along these lines is whether the streets are one-way or two-way. An additional consideration is parking since a 7- or 8-foot parking lane oftentimes provides a little extra protection for the pedestrian as he completes his crossing. In effect, parking lanes tend to reduce the effective curb-to-curb distance that pedestrians must cross during the "WALK" interval.

3. Duration of Conflict

One must analyze the periods and duration of conflict between vehicular and pedestrian movements in order to justify either an exclusive or semi-exclusive pedestrian phase. In addition, one must determine if such sequences should be provided on a pre-timed or actuated basis.

General Discussion

Combined vehicular and pedestrian movements can be used wherever the vehicular turning movements are relatively few in number and fail to endanger pedestrians. In order for this to be true it is usually found that pedestrian movements are relatively light. Whenever pedestrian traffic becomes heavy or when vehicular turning movements be-

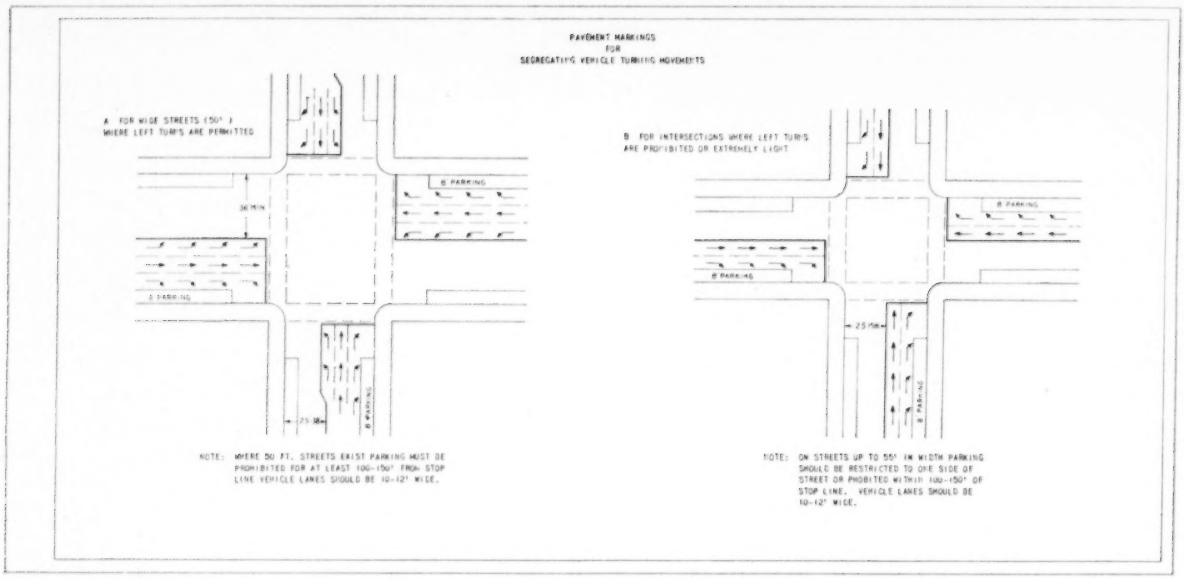

PAVEMENT MARKINGS
FOR
SEGREGATING VEHICLE TURNING MOVEMENTS
A FOR WIDE STREETS (50')
WHERE LEFT TURNS ARE PERMITTED
B PARKING
30' MIN
B PARKING
B PARKING
NOTE: WHERE 50 FT. STREETS EXIST PARKING MUST BE PROHIBITED FOR AT LEAST 100-150' FROM STOP LINE VEHICLE LANES SHOULD BE 10-12' WIDE.
B FOR INTERSECTIONS WHERE LEFT TURNS ARE PROHIBITED OR EXTREMELY LIGHT
B PARKING
B PARKING
25' MIN
B PARKING
NOTE: ON STREETS UP TO 55' IN WIDTH PARKING SHOULD BE RESTRICTED TO ONE SIDE OF STREET OR PROHIBITED WITHIN 100-150' OF STOP LINE. VEHICLE LANES SHOULD BE 10-12' WIDE.

Fig. 2

come large in number, some form of restriction to both motorists and pedestrians should probably be employed in the interests of safety and efficiency.

Restricted Turning Movements

In many instances it proves practical to eliminate all turning movements at an intersection. In other words, vehicles are allowed to proceed directly straight through the intersection but are prohibited from making either right- or left-hand turns. In such a case it is possible to move heavy volumes of pedestrians in conjunction with a parallel movement of vehicular traffic.

Frequently, vehicular turning movements are restricted only during rush hours or periods when serious conflicts exist. However, there are many cases where it is impractical or undesirable to prohibit turning movements at any time.

Exclusive Interval

In recent years, much greater use has been made of the exclusive pedestrian interval. Such applications are usually found where it proves impractical to prohibit vehicular turning movements and where pedestrian volumes are relatively high for a large proportion of the day. Intersections in shopping and business districts are typical examples. However, the application of the exclusive interval will only be successful if properly planned since it reduces the vehicular capacity of the streets involved and the intersection in particular.

Pedestrian Travel Time

As an example, one must consider the width of the street and the time it is going to take a pedestrian to cross that street. A safe factor to use in calculating this time is a pedestrian rate of travel of about 3 feet per second, although many pedestrians travel at 4 and 5 feet per second.

In the case of a 60-foot street it will take a pedestrian approximately 15 to 20 seconds to cross the street. A large group of pedestrians will take at least 20 seconds, if not more.

One can readily see that an exclusive walk interval of only 15 seconds represents 25% of a 60-second time cycle. This means that the exclusive pedestrian interval denies the use of the intersection to motorists for 25% of the time. Another way of stating this same fact is that insofar as vehicles are concerned the widths of the street are reduced by approximately 25%. With today's ever-increasing vehicular traffic this is a very stiff price to pay for the movement of pedestrians. Consequently, it takes a relatively large volume of pedestrians using the intersection for relatively long periods of the day to justify an exclusive pedestrian interval on a pre-timed basis along an important and heavily-traveled thoroughfare.

One might readily ask—"Why not operate the signals on a longer than 60-second time cycle so that the percentage of time consumed by the pedestrian interval is of smaller proportions?" Longer cyclic operation would automatically increase the capacity of the intersection insofar as vehicular traffic is concerned. However, one is also interested in the progressive movement of traffic through the signalized area.

Progressive Timing

Due to the relatively short spacing of signalized intersections in most cities it is necessary to operate signals on relatively short time cycles to provide a good speed of progression. Frequently, during rush hours longer cyclic operation with preferential offset timing proves most effective in moving heavy traffic. However, due to the desirability of operating on relatively short time cycles providing good progression during most of the day, it is usually hard to justify a long cycle just to provide an exclusive pedestrian interval.

Sidewalk Capacity

In addition, the capacity or width of sidewalks must be considered. Obviously, pedestrians are going to accumulate at each corner of the intersection when they are permitted to cross the street only during an exclusive interval. The longer time cycle of the signal, the greater the accumulation of pedestrians. When pedestrian movements are particularly heavy and the sidewalks relatively narrow, long cycle operation proves ineffective because accumulating pedestrians virtually force each other off the sidewalks onto the street. Consequently, long cycle operation oftentimes proves to be

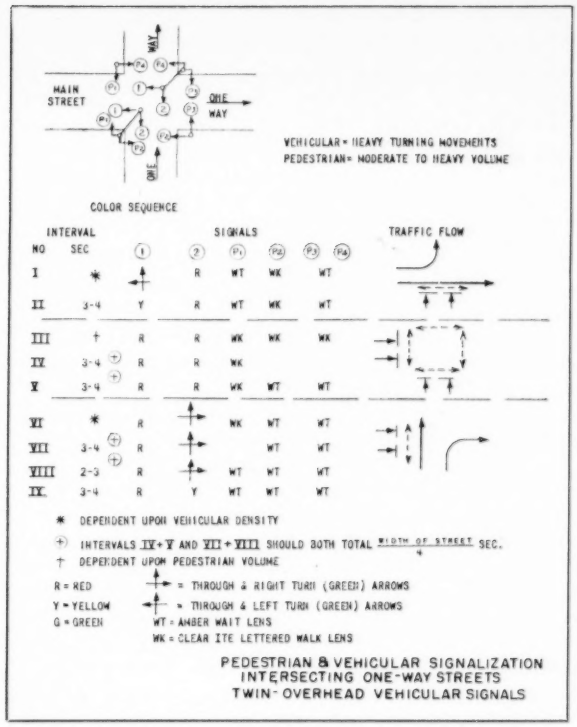

MAIN STREET
ONE WAY
VEHICULAR = HEAVY TURNING MOVEMENTS
PEDESTRIAN = MODERATE TO HEAVY VOLUME
COLOR SEQUENCE
INTERVAL
NO SEC
SIGNALS
TRAFFIC FLOW
* DEPENDENT UPON VEHICULAR DENSITY
⊕ INTERVALS IX + X AND XII + XIII SHOULD BOTH TOTAL WIDTH OF STREET / 4 SEC.
† DEPENDENT UPON PEDESTRIAN VOLUME
R = RED
Y = YELLOW
G = GREEN
= THROUGH & RIGHT TURN (GREEN) ARROWS
= THROUGH & LEFT TURN (GREEN) ARROWS
WT = AMBER WAIT LENS
WK = CLEAR ITE LETTERED WALK LENS
PEDESTRIAN & VEHICULAR SIGNALIZATION
INTERSECTING ONE-WAY STREETS
TWIN-OVERHEAD VEHICULAR SIGNALS

Fig. 3

impractical from the pedestrian, as well as the motorist's viewpoint.

Semi-Exclusive Interval

To overcome the objections to exclusive pedestrian intervals, so-called semi-exclusive intervals have proven effective. In such schemes, pedestrians are permitted to walk parallel with the straight-through movement of vehicles, right and left turns being prohibited. Following an adequate pedestrian clearing interval, the motorists are allowed to make right, and in some cases, left-hand turns.

As an example, in some cities all left turns at principal downtown intersections are prohibited. At the beginning of a vehicular phase, right-hand turns are temporarily prohibited while pedestrians are given the signal to use the crosswalks. Following an adequate clearing interval, right-hand turns are permitted while pedestrians are instructed to remain at the curb.

Vehicle Lane Capacity

In order to provide such a sequence of operations, it is necessary to be able to segregate right turns from the traffic traveling straight through the intersection. A moving lane of traffic generally requires about 10 feet of roadway. If large trucks or buses are involved, the distance may be even greater, probably in the neighborhood of 12 feet.

Semi-exclusive pedestrian intervals prove quite effective where curb-to-curb distances are relatively long or where it takes pedestrians an appreciable amount of time to cross the intersection. In such a case, it is very hard to justify a long exclusive pedestrian interval because of the consequent restriction on the vehicular capacity of the intersection. Furthermore, when pedestrian traffic is very light or non-existent, the exclusive pedestrian interval causes an unnecessary delay to motorists.

Semi-exclusive intervals, on the other hand, tend to keep vehicular traffic fluid by moving the straight-through traffic for a large proportion of the cycle. Another advantage of semi-exclusive intervals is that during relatively light pedestrian traffic a minimum number of motorists are held up needlessly.

Helpful Pavement Markings

Figure 1 illustrates a semi-exclusive pedestrian interval or phasing as might be applied to the intersection of two-way streets. Figure 2 indicates some desirable pavement markings and construction that would be needed for providing such a sequence. Note that the Plan A on the left provides for the allowance of left-hand turns. In the event that left turns can be prohibited, such provisions can, of course, be omitted for streets fifty feet or wider.

Actuated Intervals

In many cases, the physical layout of the intersection is such that the only safe way to move a pedestrian across the intersection is by the exclusive-interval method. At other times, pedestrian conflicts are relatively few in number and exist for only short periods of time. When confronted with such a problem it is usually found desirable to have an exclusive pedestrian interval added to or included in the cycle only upon actuation of pushbutton by a pedestrian. Pedestrian actuated sequences are not ordinarily too satisfactory in downtown business areas where pedestrian traffic is heavy and each signal interval must be related to many other signalized intersections. Such operation is used primarily at outlying intersections or in suburban shopping centers.

One-Way Streets

When a network or even a partial network of one-way streets is involved, the pedestrian problem is changed somewhat since there is always at least one "protected crosswalk" while vehicles are in motion. Even the situation involving

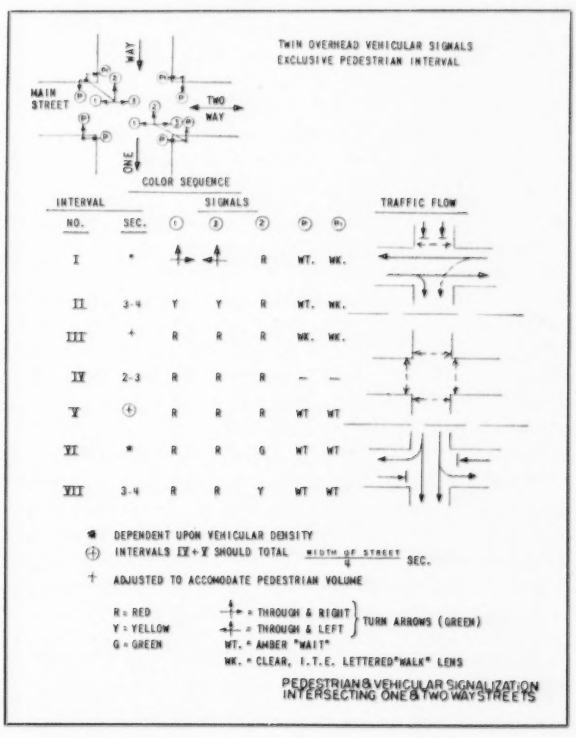


Fig. 4

Fig. 5
ITE WALK lens.

Fig. 6
General Electric's WAIT lens.

the intersection of a two-way with a one-way street is somewhat simplified. Two examples, namely Figure 3 and Figure 4, represent typical situations.

It will be noted that in both instances an exclusive pedestrian interval affording pedestrians a safe crossing of the two "unprotected crosswalks" has been provided. In all probability both situations could have been solved with semi-exclusive pedestrian intervals by restricting the turning movements for the first part of the vehicular phases.

Although double-headed arrow signal indications have been indicated in these two plans to help identify the one-way streets, separate individual arrows would be required for the execution of semi-exclusive phases. Individual arrow sections would, of course, be more eligible, especially for motorists as they approach the intersection. In any event, the one-way streets should be identified by large separate signs. The signal indications should not be used as the sole means of identifying the one-way street system.

Pedestrian Signals

In order to provide color sequences such as illustrated by these examples, special signal indications for the pedestrian should be used. Different cities have tried many combinations of "WAIT-WALK" and "DON'T WALK-WALK" signals with varying degrees of success. Some have used standard traffic signal housings with specially-lettered lenses, whereas others have used neon types of signals. All have proven successful and all have certain drawbacks.

Such cities as Cincinnati, Ohio, and Portland, Oregon, have very definitely standardized on conventional signal housings pairing a clear lettered I.T.E. "WALK" lens with a banded amber "WAIT" lens. On the other hand, many cities have standardized on the neon type of signal. Still others, such as Detroit, Michigan, and Kansas City, Missouri, use both types with about equal success. The main factor is to have a well-planned workable scheme with indications at the head of, and facing, each crosswalk.

Standard recommended practice* calls for a "WAIT" or "DON'T WALK" signal indication to be exhibited wherever a "WALK" light is used. Some cities use only a "WAIT" signal telling pedestrians when they must remain at the curb. Such a system is usually used only in conjunction with combined pedestrian and vehicle movements or where the pedestrian must be alert and cautious as he crosses the street.

The Manual on Uniform Traffic Control Devices for Streets and Highways—ASA D6.1-1948, Section 272—General Design Requirements. "A WALK signal shall always be accompanied by a WAIT or DON'T WALK indication."

Economics and Standardization

In considering the ever-present problem of economics, neon signs require high voltage auxiliary transformers and involve a larger initial investment than the standard type of signals. Conventional traffic signal housings, on the other hand, use regular standard signal lamps, are easily serviced, and involve a minimum initial expenditure.

Visibility

Insofar as visibility is concerned, neon signs have larger lettering which aids in the education or indoctrination period. However, it often proves difficult to shield the large neon signs from bright sunlight which tends to "wash out" the illuminated lettering rather easily.

Lettered WAIT and WALK lenses used in conventional signal housings provide three separate means of identification, namely, color, legend and shape. The WALK lens (Fig. 5) lettering is clear, giving the appearance of white letters on an opaque, black background. The WAIT lens (Fig. 6), on the other hand, is amber—not yellow—in color. Compared to the yellow vehicular signal the WAIT lens appears to be orange in color. The shape differential between the two lenses is accomplished by scalloping the WAIT lens above and beneath the lettering. This also allows more light to be projected from the unit, which provides added "punch" and warning to the restrictive signal.

Conclusion

Actually, every city has certain peculiarities or circumstances that must be considered. This leaves the field wide open for the development of unique solutions. However, it further illustrates the necessity to make a careful study of each problem, considering all vehicular and pedestrian movements at the intersections involved. Since many factors must be considered, especially the movement of traffic at adjacent intersections, one must thoroughly digest all pertinent information before an adequate analysis of this problem can be completed.

Assuming the development of a good solution from an engineering viewpoint, it is highly desirable, and oftentimes essential, to follow up with a suitable program of educating the traveling public as to why and how the plan works. Following an adequate trial period, usually thirty days or more, and assuming a workable scheme, the plan must be properly enforced before it will prove effective.

INVENTOR'S DELIGHT

The motor vehicle has been a great source of inspiration for America's inventive minds during the past half century.

Patent authorities estimate that one-sixth of all patents granted by the U. S. Patent Office have been for automotive inventions.

This ratio was even higher in the early days. The total number of automotive patents granted to date is close to 500,000.

About 85% of these were issued to individual inventors and small firms. The others went to major vehicle manufacturers and large firms engaged in parts-making.

Since patents expire after 17 years, about 350,000 automotive inventions are now public property.

Traffic Engineering in Norfolk, Virginia

By Fenton G. Jordan, Jr. (Mem., ITE)
Traffic Engineer

and

L. Franklin Blitz
Asst. Engineer

WE WERE somewhat reluctant to prepare this article realizing it would probably be of little use for comparative purposes, because of Norfolk's small traffic engineering budget. However, it can still serve two purposes; those who have larger budgets can see that things could be tougher, and those with smaller budgets can see how nice it would be when they have a "big" budget.

Norfolk has a population of 213,513 people. However, the metropolitan area which it serves has a population of 446,200. To provide the traffic needs of these people, the Traffic Engineering Bureau in 1952 had a budget of *only* $50,499.10. This budget does not include the cost of new signals and parking meters, for which special appropriations must be passed. The $50,499 budget is broken down as follows: Personal services—$37,106; Materials, Supplies, and Repairs (not new signals or parking meters)—$12,420; General Operation—$598; New Equipment—$375.

The Traffic Engineering Bureau, which was established in January, 1946, is a part of the Department of Public Works. The Traffic Engineer, who heads the Bureau, is responsible for the engineering, research, and regulatory activities related to the planning of the traffic movement. Enforcement remains in the Police Department. However, a Police Lieutenant has been assigned to the Bureau for liaison purposes. The staff of the Bureau, in addition to the Engineer, consists of an Assistant, a Transportation Inspector, a Clerk-Stenographer, and two labor crews with a foreman for each.

In 1948, the Norfolk Parking and Traffic Commission was established, consisting of five citizens appointed by the Council to serve in an advisory capacity to the Traffic Engineer. This Commission has been very active and works in close cooperation with the Traffic Engineer on items of major importance concerning signals, parking programs, truck routing, loading and unloading problems, etc.

These are the tools with which we work. The material from which the traffic program must be developed consists of a 1952 vehicle registration of 36,501 cars, plus approximately 20,000 service personnel operated vehicles, and a "dead end" city, i.e., the business district abuts the harbor. Geographically, Norfolk runs north and south with a traffic generator at each end of the City; the business district at the southern end, and the Norfolk Naval Base at the northern end. The east-west dimensions are approximately one-third the north-south dimensions. The northern, western, and southern boundaries are water boundaries. There are two good north-south arteries; namely, Hampton Boulevard and Granby Street. However, there are no good east-west arteries.

In addition to the geographical difficulties, Norfolk is plagued with the world-wide disease of streets that were not planned, but just grew. The growth was in extension and not width, and winding and not straight. These narrow streets, and the lack of off-street parking facilities creates problems of both parking and traffic movement.

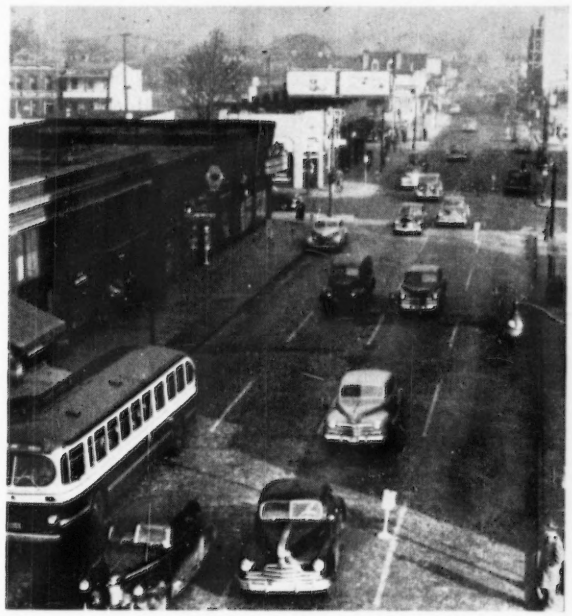


Fig. 1
Off-center lane movement on Boush Street during rush.

Signals

There are 105 traffic signals now in operation in the City of Norfolk. Sixty-four of these signals are in various progressive systems which cover about 10 miles. The plans and designs have been approved by Council for three new isolated signal installations, and also for the installation of a 6-signal interconnected cycle selector system to be installed on Hampton Boulevard, one of our main north-south streets. In addition to planning and design, the Traffic Engineering Bureau is responsible for the timing of the signals and the maintenance of the progressions.

Paint

It has been our experience that one of the least expensive and most effective traffic regulations is paint. Norfolk has 67 miles of centerlines, lane lines, and crosswalks. This is in addition to the special painting at schools, and instructional painting at certain intersections.

A single paint crew of four men, using both hand paint machines and a tractor paint machine, maintain the paint program.

Fig. 2
Sign used for reversible one-way street. The staff rotates in its socket.

One-Way Streets

Norfolk, like most old cities, is plagued with narrow streets. Additionally, we cope with the problem of a north-south City with a large traffic generator at each end. In order to facilitate the movement of the heavy north-south traffic, two major one-way street systems have been installed.

The morning traffic peak is principally a southbound movement to the Central Business District. In order to speed this movement, Llewellyn Avenue is one-way southbound from Moran Avenue to Boush Street (12 blocks). The traffic then moves south on Boush Street. Boush Street is a four-lane street with three lanes southbound and one northbound between 8:00 A.M. and 9:00 A.M. At all other times, it is a normal two-way street. The reversible feature on Boush Street is accomplished by pedestal signs which are moved into the street at 8:00 A.M. and removed at 9:00 A.M. Llewellyn Avenue section, while one-way southbound between 8:00 A.M. and 9:00 A.M., is one-way northbound at all other times. This reversible feature is accomplished by double arrow signs and reversible one-way arrows. The reversible arrows must be changed manually each morning.

A second one-way system is designed for north-south movement in the Central Business District. Monticello Avenue, a four-lane street, is one-way southbound, and Bank Street, a two-lane street, is one-way northbound. Both of these streets extend well out of the central district and empty into one of the main north-south arteries.

Since Norfolk developed on a north-south axis, there was little opportunity to develop east-west movement. Last year, an east-west one-way system was installed. Olney Road is one-way westbound, and Brambleton Avenue is one-way eastbound. The installation of this system increased the average speed from 14.5 miles per hour to 22.5 miles per hour.

It is anticipated that one-way streets will be used in the residential areas in order to move traffic and accommodate the parking needs of the residents.

Signs

Norfolk utilizes the standard regulatory and warning signs. In 1951, 1,722 traffic signs of all types were installed; 668 of these were warning and regulatory signs. The remainder were parking signs.

At present, there is in progress a program of highway marker reflectorization. This program will be completed this year.

In addition to the standard regulatory, warning, and parking signs, Norfolk is experimenting with the Yield Right-of-Way signs. Yield signs have been placed at four isolated intersections of various types, and recently the City Council has authorized the installation of these signs at six intersections on Manteo Street. This installation will be completed in the near future, and surveys made to determine their effectiveness.

Surveys

In 1951, 185 traffic surveys were made. About half of these were volume counts, pedestrian surveys, and view obstruction surveys. One origin and destination survey was made in connection with the new Berkley Bridge. This was a cooperative effort with the State Highway Department.

Planning

Traffic planning in the past year has revolved around the improvement of the one-way street system, and the opening of the Elizabeth River Bridge-Tunnel. *(Traffic Engineering, August, 1952.)*

Future plans revolve around the cycle selector system to be installed on Hampton Boulevard; changes to be made in the traffic pattern which will result from the Norfolk Redevelopment and Low Cost Housing Program, and the proposed Tidewater Drive Expressway.

Parking

The narrow downtown streets have produced a very difficult parking problem. In 1951, an effort was made to solve this problem by the adoption of a municipal parking plan, which would provide for five municipal off-street parking lots. However, this plan, while it was adopted by Council, was defeated by 94 votes in a public referendum in June, 1951.

Later in 1951, an 85-car customer parking lot, adjacent to the City Hall, was approved by Council, and the job of obtaining the land was begun. This project has not been completed to date.

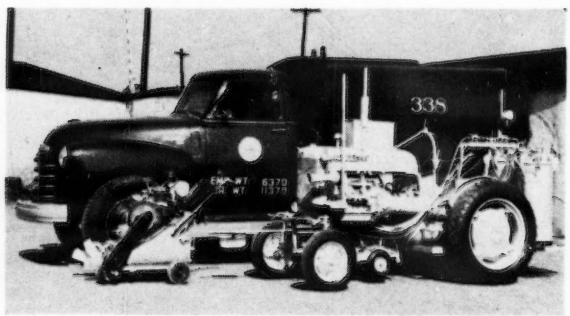


Fig. 3
Norfolk's painting equipment. Recently, an additional portable machine has been added to fleet.

(Continued on page 57)

23rd Annual ITE Meeting Paper

No. 2, Presented at the First Technical Session which was devoted to the subject, The Economics of Traffic Planning, September 9, 1952, at 2:30 P.M.

Costs of Traffic Inefficiencies

By Wesley R. Bellis (Mem., ITE)

Chief, Bureau Traffic and Safety Research, New Jersey State Highway Department

WE ARE ALL aware of the fact that our existing network of streets, roads and highways is a wonderful accomplishment of the combined efforts of the people of the country but, even though it may be claimed as the most wonderful transportation system in the world, there are many inefficiencies which are costly to the driving public. I wish to emphasize that, because of the lack of concrete proof and general agreement, progress has been very slow in overcoming the problem of measuring the costs of traffic inefficiencies on a relative basis so that their costs can be intelligently applied to and balanced with construction and maintenance costs.

Traffic inefficiencies include losses from accidents, congestion and vehicle operation. Accidents, of course, include property damage, personal injuries and fatalities. Congestion is the travel time lost because of the inability to travel at one's desired speed. Vehicle operation includes extra miles traveled, inferior type of pavement and rise and fall of grades. There are other inefficiencies which at present seem to be expressed only by the lack of efficiencies. These may be termed conveniences, which include features to make driving less of a nervous strain and more pleasant. Another item, which I call generated traffic, includes the increase in traffic volumes other than normal traffic volume increases and which results from the removal of the impediments to such traffic volume growth.

Each of these inefficiencies results in a loss of something, the loss of which we, as a people, are anxious to avoid. We are willing to provide the funds necessary to overcome the inefficiencies so long as the value of the savings is greater than the cost of providing the savings. For example, if it could be agreed that the value of the savings was equal to three times as much as the construction cost, it would be considered a good investment. This could be accomplished in the savings in the cost of car operation if a road carrying 50,000 cars per day were reconstructed so as to cause a reduction of one mile in distance at a cost of $4,500,000. If the construction cost were financed by bonds over a 30-year period, the $4,500,000 should include all interest and other charges. The 50,000 cars per day is equal to 18,250,000 cars per year which at 3 cents per car mile, would equal $547,500 saved per year by a reduction of 1 mile of travel distance. In 30 years this would be $16,425,000 or well over three times the cost. There is no intention here to illustrate a specific problem. I am merely illustrating that the cost to the highway users should be related to the construction cost.

Basically, all proposed or suggested improvements in our roadway system today are initiated by a realization of a traffic deficiency. Thirty years ago roadway construction was justified on the basis of the development of land areas. Today this is a minor factor being limited almost wholly to real estate subdivisions. In New Jersey there is no piece of land which is more than one-half mile from a public road except for one small section of marshy land which is two miles from a public road.

Much has been accomplished in the past to reduce the vehicle operation inefficiencies by providing hard surfaced pavements, direct alignments and flat grades. Now, because of congestion, we have a vehicle operation cost item to consider because of the inefficient operation of motor vehicles at slow speeds due to overheating, less gasoline and oil efficiency, wear and tear on clutch, brakes, tires and motor parts. Probably the progress made in this direction has been accomplished by virtue of the fact that operation costs are concrete rather than abstract. They can be readily visualized. A dollar saved by a reduction in mileage can be accepted as an extra dollar in the pocket, even though the saver may then spend the dollar by traveling more frequently or further away than he previously was accustomed to do.

In contrast to the praiseworthy progress made in reducing the vehicle operation inefficiencies, is the accident problem. Although progress has been made in reducing accident, injury and fatality rates in the last 11 years, no one can be certain that the downward trend can be maintained. We know too little about the causes of accidents. Some of the modern highways built specifically with every known safety design turn out to be just other accident prone highways. Some old highways with bad alignment and with 40-foot drops on each side of a 20-foot roadway with no guard rail may have a better accident record than some of our super-duper highways. Every engineer and administrator responsible for the selection of design or type of improvement sincerely attempts to first make sure of the safety factor.

When discussing the cost of inefficiencies in safety it is very difficult to visualize the cost of an accident, injury or fatality. When our Highway Department was making preparations a few years ago to remodel a certain highway with a bad accident record, I was presented with an argument by the owner of a repair garage along the route that if this project were completed he would be without work because there would be no accidents and his wife and four children would be without support. I and the rest of the Highway Department would be guilty of causing them to go hungry;

and didn't I even care if they starved to death? He argued, there were plenty of other places to spend the money where it wouldn't put honest men out of business.

It is true that automobile repairmen thrive on motor vehicle accidents to the point of being calloused. In the United States the accident property damage alone for one year is estimated at almost two billion dollars. This is a sizable business.

Any property damage accident results in a financial loss to the highway user and, therefore, he can see an advantage if the accidents can be avoided but, as illustrated above, there is an equal and opposite compensating value so far as overall society is concerned; and after all the garage man did not cause the accident. "You wreck them, I fix them" is found in big type on many garages. From our point of view as Traffic Engineers, we have no difficulty in accepting values for deficiencies in safety based on property damage in spite of the possible indirect resistance which may be present.

Injuries and fatalities are not so easy to evaluate in financial terms and it is practically impossible to get some people to agree to any given figure. In some cases injuries are even worse than death. I have taken the attitude that the value of a life is indeterminate. It might involve, let's say, a genius and, therefore, approaching an infinite value. The average between infinity and zero doesn't help any. In spite of this conviction and for the sake of an engineering comparison, we must agree that a life is worth something and that any value assigned is better than none at all.

Those who object to placing a value on life are thinking in sentimental terms. If we agree that it is good practice to spend money to make improvements in order to reduce accidents, we must be able to equate the accidents saved, injuries saved and fatalities saved to the cost of providing these savings. The unit value adopted should be such that there will be a reasonable balance with other items of highway benefit. For instance, where should we spend a certain given amount of money? At a location where there is one fatality every two years and no congestion or other traffic inefficiencies? Or should we spent it at a location where traffic volumes far exceed the capacity of the road and traffic congestion is so bad all day that traffic is slowed to a walk even though there are no fatalities expected?

We could eliminate highway traffic fatalities by not having any highways. We could greatly reduce traffic fatalities by making our roadways so rough and bumpy that it would discourage travel and reduce speeds of the few remaining drivers to a crawl. This is not reasonable. We must continue to build roads of high type design and hope to find ways of reducing the accident toll and still enjoy the advantages of good roads.

It could easily be that the reluctance, generally, to treat the accident problem scientifically instead of sentimentally has hampered progress that might have been made. I feel sure that if we would think in terms of a financial equivalent of accidents we would hasten the further reduction of traffic accidents. The unit values applied by the National Safety Council are very acceptable. Variations because of economic conditions in areas or different years could be applied as refinements.

Although the vehicle operation problem has been practically solved and the accident problem has been at least partly solved, the congestion problem has grown in leaps and bounds. We are so far away from solving the problem that it seems hopeless. New modern roads that, during the planning stage, we justified on the grounds that they would relieve the serious congestion on existing parallel roads and reduce the travel time through the area, have, since the day they were opened to traffic, been just as congested as the former parallel roads and the reduction in congestion on these can not be noticed, in fact, it even might seem worse.

Today our number one traffic inefficiency is congestion. We are losing ground fast. In 1948 we estimated, as a result of a careful study, that one-third of the New Jersey State Highway System (which we feel sure rates among the best) was inadequate because of insufficient capacity and that by 1970 another one-third would become inadequate because of expected increases in traffic volumes. The original one-third would then be still more inadequate. In another study, made in conjunction with the Bureau of Public Roads, it was found that in order to bring three of our major routes, comprising about 200 miles out of a total of 1,700 miles, up to modern recommended standards it would cost about $400,000,000. Our construction budget was running about $25,000,000 per year.

At the beginning of this year the New Jersey Turnpike was opened to traffic as a toll road. A general application of toll roads may prove to be a solution. It offers an additional source of income for road construction. It could be possible for a toll on one road to be used to finance improvements on other free roads and streets. The toll roads of today are much different than the toll roads of 1905. Today's toll roads are truly roads of the future, which can be used today. By non-toll financing such as gasoline tax and general tax these roads would not be completed for possibly 100 years.

An analysis of traffic volume growth trends indicate that traffic volumes are increasing faster than population growth. It should be expected that at some time in the future traffic volume increases will slow up to a rate equal to the rate of population growth. Improvements to our road network system have not kept pace with traffic volume growth. A further study of the growth trends indicates that the traffic volume rate of increase will have slowed up sufficiently by the year 2050 so that roadway improvements will then start to catch up. By then congestion will have become much worse than it is now. All this is based on the assumption that highway improvements will continue at present rates.

We must attempt to accelerate the improvement programs if we are to enjoy to full advantage the convenient transportation provided by the automobile.

It may be that toll roads will provide the needed acceleration.

Although the New Jersey Turnpike has been outstandingly successful, it has not eliminated traffic congestion on parallel routes at the locations where congestion was most serious. On U. S. 1 in Newark, during 1951, there were 86,600 vehicles per annual average day. Now with the Turnpike parallel and about one-half mile away there are still 73,000 cars per average day for the first half of 1952. The Turnpike at the corresponding location has averaged 27,000 cars per average day for the first half of the year. For the complete year of 1952 I expect that there will be 75,000 cars per annual average day on U. S. 1 and 30,000 cars per annual average day on the Turnpike making an increase of

18,400 cars per average day during the year. There are no other parallel roads from which this added volume can come. Based on other volume increases in the area we should expect a normal growth increase of 4,400 cars per average day. Where will the other 14,000 cars per average day come from? This is what I call generated traffic. In two or three years Route 1 will probably be as congested as it was in 1951 through this area.

This illustrates that even with a general acceptance of the toll road principle as a source of revenue, large sums of money must still be applied to free roads and streets. There still is, then, a problem of finance.

The responsibility for demonstrating the magnitude of these inefficiencies to the public and to the administrative officials of various governments rests solely with Traffic Engineers. I am positive that the average highway user wants congestion-free roads and streets and I am just as sure that he is willing to provide funds for the improvements if he knows he will realize benefits which he values more than the construction costs. The reluctance to provide the necessary funds is a result of the inability to evaluate or to agree upon an evaluation of benefits such as vehicle time losses, driver conveniences and generated traffic. These constitute the greatest traffic inefficiencies today. The summation of time losses which are plaguing us today is staggering. Other traffic inefficiencies are small by comparison except the convenience inefficiency which, in my opinion, approaches the magnitude of congestion but because of its complexity I will not attempt, at this time, to discuss fully. The equivalent money value is even harder to assign than the money value of time lost.

A center island, or median if you prefer, in addition to its safety value provides a convenience value. Even though the center island did not make a road safer it might be accepted as good engineering because it gives drivers a sense of security. They feel more comfortable.

Along a major route frequent driveways and crossroads are nuisances. It is much more pleasant if drivers do not have to constantly be on the alert for cars coming from side roads even when the odds are very slim that a car will come from one. Drivers can then concentrate their attention on other driving details. This is the principal advantage of a Freeway over a normal highway.

Highway beautification is a convenience item which adds to the comfort of driving.

When traffic volumes are large there is a necessity for constant attention which produces driver fatigue. It is convenient to avoid these densities of traffic. Such items as this can be recognized as justifiable for construction expenditures. Year after year the public is demanding better driving conditions much of which can be directly traced to convenience items.

Except for vehicle operation, none of the traffic inefficiencies can be directly related to money losses or savings. They can only be compared financially by supply and demand principles. The service can be supplied if the demand is sufficiently great.

When impediments to traffic are very severe some drivers are discouraged from making certain trips. Our major impediment is congestion but to illustrate generated traffic imagine some large bridge carrying large volumes of traffic such as the Golden Gate Bridge or the Philadelphia-Camden Bridge. Practically all of the traffic on them was generated by the construction of the bridges. Very little of the traffic came from facilities which were existing before the bridges were built. This generated traffic is worth the increase in business which was made possible by the increased traffic. The cost of the bridges has been paid for many times over in a multitude of businesses. It is impossible to pick out these businesses but if you can imagine being suddenly without them you may be able to visualize the business calamity which would follow. This would be the reverse of generated traffic.

The cost of car operation reflects in the driver's pocket.

The cost of accidents is summed up in property damage, bodily injury and fatalities.

The cost of congestion is reflected in time losses.

The cost of inconveniences is summed up in driver fatigue, nervous strain, etc.

The cost of generated traffic is reflected in general business activity.

Those of you who have attempted to measure the amount of time lost on our congested streets, roads or highways, have undoubtedly come up with astronomical figures. You probably toned them down; yes, way down to that you would not be classed as a crackpot or one trying to build up a job for himself. Even then your estimates were probably only used in a confidential manner. I remember some years ago reading that time losses in New York City were estimated to be equivalent to $1,000,000 per day. From preliminary estimates that I have made time losses could be equal to almost that much in New Jersey.

None of us here can fail to agree that there is justification for spending large sums of money to overcome congestion. Let me draw a mental picture of congestion as experienced in most of our cities today. At some of our intersections we have prohibited left turns, which is an ingenuously simple device for keeping traffic moving, and therefore, a driver desiring to make the left turn must continue straight beyond the intersection to the next cross street, where he makes a right turn and continues on around the block to cross his original intersection at right angles to his first crossing. When volumes are large this stream of traffic may be continuous and, as the expression goes, bumper to bumper. All in the stream may not be making the left turn but the effect is the same. There is a complete circle of cars each of which cannot move unless the vehicle ahead moves but the vehicle ahead cannot move because the vehicle ahead of it cannot move and so on continuously around the circle. If you are in the line you are in your own way. Maybe horns start blowing and you blow at yourself. Everyone blames everyone else but no one blames himself.

Another vivid pertinent fact that I would like to emphasize is that after capacity volumes are reached congestion increases very fast with each small additional increase in volume. When volumes are below capacity a 44% increase in traffic can be expected to cause a 44% increase in congestion but after capacity has been reached our studies show that a 44% increase in traffic produces a 600% increase in congestion.

From time to time and from different authorities there have been various values placed on vehicle time losses. A probable reasonable value for today may be two cents per vehicle minute. Values have ranged from one cent to four cents per minute. There is reason for variation between areas and also during changing economic conditions but once a

(Continued on page 60)

23rd Annual ITE Meeting Paper

No. 3, Presented at the First Technical Session which was devoted to the subject, The Economics of Traffic Planning; as participation in the Panel Discussion, Financing Street Transportation Plans, moderated by D. Grant Mickle; 3:30 P.M., September 9, 1952

Financing Off-Street Parking Facilities

By Matthew Carey
Municipal Finance Consultant, Detroit, Michigan

The Parking Problem

THE NECESSITY of city administration participation in the problem of providing adequate parking facilities in congested business areas can now be taken for granted. The eager public patronage of privately developed fringe shopping centers, with adequate and well-planned parking facilities, has awakened city officials to the threatened decay of the central business district resulting from moving traffic and parking problems (and the probable decline in its lucrative general property tax base) more forcibly than years of complaint from the shopping public suffering from neglect of these problems.

Zoning For Future

The development of new problems in neighborhood business centers can be prevented by adoption of zoning measures requiring provision of adequate off-street parking facilities as a condition precedent to the issuance of building permits for structures which generate substantial parking demand.

Curb Parking

The problem of providing adequate parking to serve existing structures still needs plenty of attention. Efficient use of available curb parking space is an essential first step in this direction. Such space should, of course, be dedicated to short-time parking; and the intelligent use of parking meters promotes turnover of this space. Curb capacity tends to decline with efforts to alleviate the moving traffic problems.

Private vs. Public Financing of Off-Street Parking Facilities

Whether off-street parking facilities should be publicly or privately provided is a question that has been hotly debated at four annual conferences sponsored by the Chamber of Commerce of the United States—with the arguments fully reported in their published proceedings. Many splendid papers by David R. Levin of the U. S. Bureau of Public Roads have summarized legislation, thinking, and practice with respect to the parking problem. The recently published study—"Parking—How it is Financed"—prepared by the Automotive Safety Foundation for the National Retail Dry Goods Association will be the practical Bible on this subject for some time to come. It summarizes succintly and graphically what has been done to date; and shows clearly that there is no one BEST WAY to meet this problem. Local conditions and leadership dictate the solution.

My own conviction is that the municipality should have the facts as to the amount and location of the parking demand; should continuously study the growth and shift in location of that demand and the extent to which it is satisfied by curb, private and commercially-operated facilities; and should take steps to insure a core of permanently located parking facilities sufficient to serve the short-time parking needs of clients and customers of surrounding office buildings and retail establishments. Long-time parking needs of occupant personnel can be left to the law of supply and demand. Some degree of public ownership may be necessary to insure permanency; but such public projects may well be privately operated to advantage.

So much for background considerations—now to the subject of

Financing Off-Street Parking Facilities

I am assuming that most of you are traffic officials of municipalities, including state and county officials who frequently deal in traffic problems with and through city, village and township officials. I am further assuming that parking problems represent only a fraction of the overall area of traffic engineering which the majority of you cover as a municipal traffic official. Your interest in financing would therefore be with respect to the type usually undertaken by the municipality itself and the contribution expected from you to obtain a satisfactory result. I am excluding from my discussion large metropolitan cities where many special factors are involved.

So-called private enterprise financing is thereby pretty well excluded, although some features of it will be discussed at the conclusion of this paper.

Traffic Engineering As Applied to Off-Street Parking Facilities

The principles of data assembly and analysis to support parking lot or garage location and size, and in developing layout and design, are as well established as comparable principles with respect to water supply and sewage disposal systems. YOU are the specialists in that respect. Architects and engineers are involved in the structural design.

As a specialist in municipal finance, I can tell you what the bond dealer and his customers—the investor in municipal bonds—likes to see in connection with a bond offering. Evidence of good structural engineering; of adequate study to establish demand and location of the project; of layout to produce maximum income at minimum expenses; and substantiated estimate of capital costs and projected income and expense are needed to support either private or public financing of parking facilities.

Municipally Financed Parking Facilities

Subject to the enabling legislation existing in each state, three types of bond financing are available—

1. General obligation—the amount of such bonds which may be issued is usually limited by statute or charter, with an approving vote of the electorate required, so that this type of bond is usually reserved for types of projects which cannot be financed by other means; and little used for parking facilities.

2. Special assessment—popular in some states where enabling legislation is favorable and for smaller projects—but not likely to be widely used because of difficulty in assessing benefits and other legal restrictions. Adjacent property owners who pay special assessments are likely to feel a proprietary interest in the facility and handicap the regulation of its use as part of the overall parking system.

The purchaser of these two types of bonds has no concern about the traffic engineering involved, because principal and interest is paid from ad valorem special assessment taxes. He is definitely interested in traffic engineering from the third type because such debt service charges must be met solely from the earnings of the parking system.

3. Revenue—under which curb and off-street facilities and revenues are combined in an integrated parking system. This type of "automobile parking system revenue bond" has been developed in Illinois and Michigan; has been upheld in test cases in their Supreme Courts; has become familiar to investors in municipal bonds and seems likely to become the most generally used medium of financing off-street parking facilities.

Since the bonds must be paid from the earnings of the system, the investor expects in this—as in a public utility bond—a showing of net revenues which provides sufficient "cover" to preclude default in periods of business recession which may be expected over the life of the bond issue.

Curb and off-street parking are so interlocked that curb meter revenue must be pledged along with those of the parking facility itself. Appropriate provision to reimburse the General Fund for services performed by the Police and Public Works Departments may be included with a further reservation of right to transfer some percentage of surplus remaining at the end of the year.

The investor will be influenced by supporting evidence from the traffic engineers in the following subjects:

1. Parking demand for the proposed facility and suitability of location in relation to demand.

2. Layout of the lot or garage to insure efficient use of land or structure. Large investments are involved for a long period of time and mistakes in layout will have a cumulative effect in reduced income and increased expense.

3. Estimates of capital costs must be accurate to insure completion of the project from financing provided by the bond issue.

4. Projected receipts and disbursements should be shown for successive years and in sufficient detail to permit comparison with known factors with respect to existing projects. The investor is influenced by historic earnings and for this reason leans heavily on the record of curb meter receipts in appraising a parking system offering.

5. Maps and graphs which help to visualize the projects to be financed.

Privately Financed Off-Street Parking Facilities

Traffic engineers who operate as consultants are learning firsthand about matters peculiar to accessory parking facilities for shopping centers, office buildings and department stores. Such financing is generally based on a combination of the property collateral value of the entire project and the credit of the sponsoring organization. Parking, like other features of the main project, is designed to make that project successful.

Parking lots or garages set up on the Allentown or Minneapolis principle usually have a substantial element of subsidy from the sponsoring participants.

Commercially operated parking lots, by and large, are run by experienced operators who pay a nominal monthly rental, with indefinite tenure, to an owner who is awaiting the advantageous sale of the land or a propitious time to permanently develop it.

On the other hand, the parking garage, commercially-operated for a profit, represents a substantial investment in a single-purpose building and can only be financed under the most exacting conditions. Municipal subsidy, through property tax exemption, as recently authorized for the City of Buffalo, may be substituted for merchant sponsorship to facilitate financing this type of project.

TRAFFIC ENGINEERING IN NORFOLK, VIIRGINIA

(Continued from page 52)

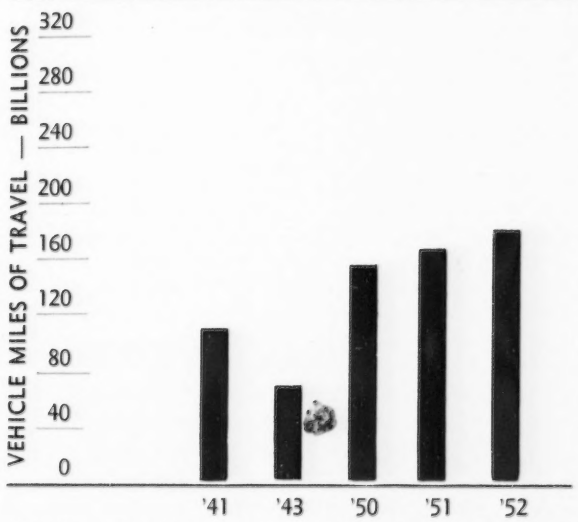
Mass Transportation

The Virginia Transit Company operates 257 buses on 19 lines covering the City. There is also a bus line which is run over the new Bridge-Tunnel linking Norfolk and Portsmouth. The buses on this run are in addition to the Virginia Transit Company buses, and while they are owned by the Transit Company, they are leased to the Elizabeth River Tunnel Commission. It is the responsibility of the Traffic Engineering Bureau to carry out surveys to determine bus loads and to see that the schedules are maintained.

Conclusion

We believe that engineering-wise the Norfolk Traffic Program will stand comparison with other cities its size and dollar-wise the program is well in front of those cities.

Traffic Trends



TRAVEL ON RURAL ROADS FOR FIRST EIGHT MONTHS OF 1941, 1943, 1950, 1951 and 1952

Based on Bureau of Public Roads Data

Automatic Parking Garage Proposed for Detroit

By Herman M. Batts, Jr. (Jr. Mem., ITE) Associate Editor TE
Sr. Asst. Traffic Engineer, Department of Streets and Traffic, Detroit

A RECENT press release issued to the Detroit newspapers read in part as follows:

"A joint attack on Detroit's and the Nation's parking problems is to be made by the City of Detroit and Michigan Industrialists under a proposal soon to be laid before the Common Council by Mayor Albert E. Cobo and the Municipal Parking Authority. The Automatic Storage Corporation has agreed to construct and place in operation on City-owned property at their own expense, a complete automatic parking machine with a capacity of 100 cars. If the equipment proves successful, it would be purchased by the City and enlarged to a 300-car capacity, and if not successful, it would be dismantled and removed without expense to the City."

The Municipal Parking Authority made the above announcement after two years of consultation with officials of the Automatic Storage Corporation on the design and development of a parking machine utilizing mechanical features now found on automobile production lines.

The proposed garage is to consist of three 100-car parking machines housed in an open deck type structure with an attached office and control room. Each 100-car parking machine will occupy a parcel of land 18 feet wide and 100 feet long. The overall size of the garage will be 54'x100' with an attached 10'x70' office and control room.

A 100-car parking unit contains 10 parking floors in addition to the entrance and exit floor. A typical parking floor will have four vehicles parked, two abreast and two deep, on each side of the elevating cages. The elevating equipment of the unit consists of 24 cages in two adjacent stacks of 12 with crossover space at the top and bottom of the stacks. The two stacks of cages are counter-balanced so that it is necessary only to overcome the out of balance load to set them in motion. When one stack of cages is raised one floor, the adjacent stack is lowered one floor. After a one floor movement the top cage of the stack that has been raised is transferred to the top of the opposite stack and the bottom cage of the stack that has been lowered is transferred to the bottom of the other stack. By a positive mechanical action the stacks are raised or lowered one floor in three seconds and transferred in three seconds. Thus, the time cycle for a one floor movement is six seconds.

The movement of a parked vehicle from a parking stall to an elevating cage is accomplished on conveyor equipment with an individual conveyor for each stall and cage in the structure. The movement from one conveyor to another takes nine seconds.

The entire operation of the garage is monitored by a control board in the cashier's office. In normal operation garage personnel will be required to direct motorists into and out of the reservoirs and to staff the cashier's office.

A typical parking act will occur as follows: The motorist will drive into the inbound reservoir and leave his car in a stall in front of the elevating equipment. When entering this stall the vehicle trips a tread switch which actuates a time stamp in an automatic ticket dispenser installed on the driver's side of the stall. The motorist then may set the car's brakes, lock his car and then obtain his claim check from the automatic ticket dispenser. As he takes his claim check from the dispenser a corresponding check is automatically inserted into the control board in the corresponding stall in a locked position. As soon as electronic equipment indicates that the motorist and passengers have left the stall area, the control board ticket is unlocked. The operator then actuates the parking equipment by moving the ticket on the control board.

When picking up his car the motorist will present his ticket to the cashier and pay his parking fee. The cashier will then bring his car to the outbound reservoir by moving the corresponding ticket through the control board.

A study of the operation of the proposed garage based on the expected timing of the parking operations indicated that the equipment will be able to park and unpark cars faster than the average motorist will be able to ready his car for parking or accept delivery of his car and drive away.

As "the proof of the pudding is in the eating" the Automatic Storage Corporation and the Municipal Parking Authority are hopeful that the initial 100-car unit will be ready for operation by June 1, 1953. Until this initial parking unit is completed, all that can be said is that it looks very good on paper.

MEMBERSHIP INFORMATION

may be obtained by writing to:

Executive Secretary
Institute of Traffic Engineers
Strathcona Hall
New Haven 11, Connecticut

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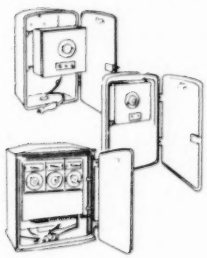


Front-of-dial adjusting means for changing length of street intervals as well as amber periods.

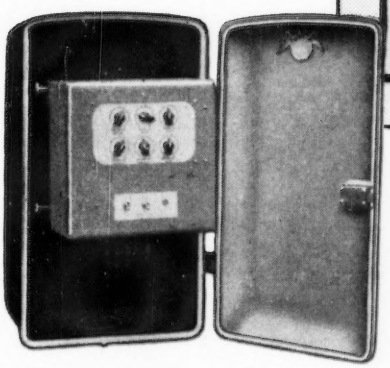
Separation of traffic controller cycle dial from cam unit, with independent power source to intermittently advance cam shaft responsive to dial contract acuation by rotating cycle dial.

Component-type traffic controller constructed of seperate units, including cycle dial mechanism, signal contact mechanism, relay mounting facilities, etc.

Traffic controller rotating cycle dial equipped with self-locking removable dial keys.

Sectionalized multiple-dial controller allowing choice of from one to three removable cycle units, each with independent motor.

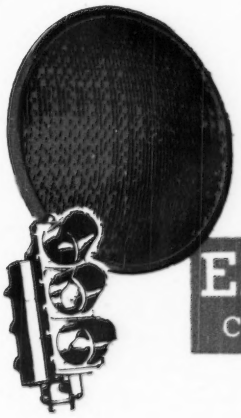
1ST



Eagle is the only manufacturer of pre-timed and vehicle actuated traffic equipment. Eagle Signal "know how" engineers can therefor recommend the right equipment for your individual traffic problem. Let Eagle's experienced planning department help solve your traffic problem today.

ET 40 CONTROLLER
Bulletin F10

For more "GO" at intersections where side street traffic is often spasmodic, as at industrial plants, or where danger lurks at blind intersections. Here signal lights are green to main street artery, except when actuated by cross vehicle traffic or by pedestrians.



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COST OF TRAFFC INEFFICIENCIES

(Continued from page 55)

value is determined, justified variations are not controversial.

The value of vehicle time is not generally accepted. This may be a reason why progress has not been made in overcoming congestion, although progress has been made in vehicle operation and safety. When time is saved there is no equal and opposite loss to someone else as there is for other traffic benefits. Congestion has grown most rapidly in and around our large cities. These are the locations where the least has been done to modernize our roadway system. Not because of indifferences on the part of the authorities but because of the great difference in cost between urban construction and rural construction, including the cost of right-of-way and because of the resistance of individuals in urban areas to being disturbed. It seems that each of us feels that we should be spared the pains of progress when it seems such a simple matter to disturb our neighbor instead. Whole cities in Europe have been or are being rebuilt on the same miserable narrow and unsuitable street systems that they had before the war. We would probably do the same.

Because we have concentrated on modernizing our road system in locations where the problem is relatively simple and also inexpensive, we are now confronted with problems in the urban areas which are colossal by comparison. We have become accustomed to free use of our streets and roads but this free use is not really free at all. It has resulted in stagnating congestion, which is much more costly than the cost of remedying the condition. Because of the free nature of our roadway system we have no concrete comparison on which to base a unit value.

To help us in our thinking of this unit value consider the following: A family wishing to while away some time with no place in particular to go may decide to do so by a drive in the car. They would, without doubt, desire to drive at least 30 miles per hour. If they were requested to stand still for an hour rather than drive, they would be dissatisfied. Therefore, since at a car operating cost of three cents per mile it would cost ninety cents per hour to travel at thirty miles per hour, they have decided that their time is equivalent to a value of one and one-half cents per minute. Any other vehicle time certainly should be worth more than this value. Some authorities like to equate vehicle time to earning power. This seems acceptable for commercial vehicles but not for passenger cars. A man's leisure time is worth more than his working time as evidenced by the one and one-half time and double time for overtime.

If we, the public, wish to eliminate congestion it can be done if we are willing to face the facts. Conditions have become so bad that the public is looking for proper leadership. Just as great strides were made in the 10 years from 1930 to 1940 in reducing operating costs, and progress in safety, that we hope is permanent, has been made in the 10 years from 1940 to 1950, let us hope that we, in the 10 years from 1950 to 1960, can overcome the useless waste of time due to congestion, our major traffic inefficiency, the equivalent value of which on a nationwide basis I have hesitated to guess. But in conclusion, with very little proven data to rely on and with an attempt to stimulate a sincere interest of proper proportions, please allow me to say that it is quite possible that time losses due to congestion and the inability to travel at a desired speed could be equivalent to a loss of 10 billion dollars per year throughout the nation.

TRAFFIC NEWS

Public is Interested In Highway Safety

The professional traffic safety leaders are responsible for public bewilderment and confusion about how to reduce increasing highway accident tolls, Harold P. Jackson, president of the Bankers Indemnity Insurance Company and chairman of the committee on safety organization of the President's Highway Safety Conference, told the National Safety Congress on October 23rd.

"The public is not apathetic," Mr. Jackson declared, "the great civic and service organizations are not disinterested. They are bewildered and confused, they are groping for concrete answers—and the professionals in traffic safety have created that bewilderment and confusion out of crisscross of do's and don'ts, out of a morass of indecision, and out of jealousies and bickerings, which have obscured the objective of saving human lives.

"Without firm guidance, public interest in traffic safety is an aimless wanderer. Without agreement among public officials as to what is needed, public interest is helpless. Without the tremendous professional force for safe highways working harmoniously and providing the people with the steps of how the job must be done, public interest sputters and fizzes like a damp firecracker."

Speaking in answer to the question "Is the Public Interested in Traffic Safety?" Mr. Jackson said he appeared in defense of the people and laid at the door of the assembled professional safety leaders of the nation responsibility for the fact that "we have made no significant, permanent reduction in traffic deaths and injuries on our streets and highways."

"Moreover," he told the National Safety Congress, "there appears to be no immediate prospect for improvement. The inventive genius that fashioned the machine and the highway, the merchandising genius which markets everything from chlorophyll dog food to glass tack hammers, have yet to sell safety as an essential in the use of 52,000,000 vehicles on 3,322,000 miles of highway.

"As is so often the case when we recognize failure, someone has to be the goat. It can't be the highway safety engineer—he knows how to build safety into the highways and does so as rapidly as funds will permit. It can't be the traffic engineer—he knows all about the design of interchanges and channelization. The police are not condemned for being ignorant of the best methods of traffic law enforcement. It can't be the educator—when only 54 per cent of the eligible students are enrolled in high school driver education courses. So—who is the goat? The answer is already evident—the people.

"But the people lack the intimate knowledge of highway safety to take the Action Program of the President's Highway Safety Congress and translate it into terms of application to their own community. They are staggered by the whole broad program and they search for segments they can understand and which lend themselves to organized action. Naturally, they turn to official and professional leadership for the answers. What do they get?

"One group of professional interest says the most important step is better roads. A second stresses uniform traffic laws. A third claims everything should be done through a local safety organization. A fourth holds out for periodic motor vehicle inspection, a fifth contends this is a commercial device, and a sixth announces that one out of three motor vehicles is unsafe. A seventh aggregation will aver that the removal of all out-door advertising, or governors to control speeds, or national prohibition is the highway safety cure-all.

"The net result—no program at all.

"Hopelessly befuddled, the individuals and organizations who make up the public enter a state of coma which I call safety stagnation. Then, the same wiseacres who killed the spark of public enthusiasm label this catalytic condition 'public apathy.' Is the public interested in traffic safety? Yes, from both the bottom of the heart and the bottom of the pocketbook.

"Public interest in traffic safety is present today in ever-growing volume. You may call it stymied from safety stagnation, or crippled by constant confusion, but it still needs only the right push to get it going. Public interest will not achieve maximum velocity—it has gone down too many dead-end streets. It will require evidence of professional safety organizations working unselfishly toward a common end. It will require safety officials agreed in practice as well as in preaching. It will require clearly defined statements of immediate objectives and clearly defined step-by-step programs for the realization of those objectives.

"The emphasis of the 1952 President's Conference on more adequate accident facts was a stride with seven league boots. We have relied too greatly upon the trend of traffic fatalities as a measurement of progress. We have been prone to boast about the traffic fatality rate without admitting that we knew neither how many accidents took place, how many involved property damage, nor how many involved personal injury.

"Our question, asked in this gathering, implies some deficiency in the intelligence of the American people or in their ability to weigh normal, spiritual and economic values. In my opinion, there is no question of public concern in traffic problems. For one reason or another, at some time, every individual is interested in traffic safety. The real question is how to hold that interest and how to channel it into an actual force for safe living. Properly guided by inspired leadership, with a well defined program, we have the greatest power for public good in the history of our nation. But we are still searching for the fuse that ignites the powder."

When You Change Your Address

. . . please notify us promptly. Your copies of **"Traffic Engineering"** will then reach you without delay and without interruption.—Traffic Engineering Magazine, Strathcona Hall, New Haven 11, Conn.

Local Sections Compete In New Member Drive

At the recent annual meeting of the Institute in Chicago, official announcement was made of a membership drive for the current Institute year. Mr. Robert S. Holmes, Chairman of the Committee on New Members, announced at the annual business meeting that his Committee had received approval by the Board of Direction for a one-year membership drive. ITE Local Sections were to officially promote the increase in membership on the basis of quota allotments designated by the Committee on New Members. The drive is the direct result of a recent policy adopted by the Board of Direction of ITE opening up membership to graduate engineers who work in fields closely allied to traffic engineering as such, and who have occasion to cooperate with traffic engineers on traffic and terminal projects. When past-President Cherniack activated the Committee last April, he explained the Board policy as follows:

"City planners are often assigned to work on traffic facilities and terminals and consequently should cooperate with traffic engineers but, at times, may work at cross purposes with local traffic engineers. Consequently, membership of city planners in ITE would help considerably to bring about a better understanding by city planners of the objectives of traffic engineering.

"Similarly, geometric designers often work in a vacuum as far as traffic engineering is concerned. Such persons, brought in as members, would be indoctrinated in the principles of traffic engineering and, consequently, would be more likely to work closely with traffic engineers.

"All over the country, in cities and states, in firms of consulting engineers, in the transit industry, there are persons who are graduate engineers, who practice various phases of traffic engineering and who are qualified to become members of ITE but who are not presently members merely because they have not been approached and invited to membership by ITE members."

In making the announcement of the drive at the annual business meeting, Holmes indicated that it was not the intention of the Board or the Committee to "let down the bars" and allow anyone with minimum qualifications to become a member of ITE. The basic requirements for membership, as outlined in the Institute's Constitution and By-Laws, continue to serve as qualification standards. The membership was urged to carefully review the Statement of "Traffic Engineering Experience" Requirements and the Statement of "Responsible Charge" contained on pages 54 and 55 of the 1952 ITE Yearbook. He pointed out that applicants for Junior and Associate grade "having experience in at least one of the plans listed above" (page 54) are eligible for membership. It was, therefore, logical to assume that geometric designers, city planners, transit engineers and consultants may be considered for ITE membership.

In establishing the quota allotments for each Local Section the Committee made a study of section areas and membership from 1952 Yearbook data. A Committee "Sponsor" was designated to provide guidance and consultation to the officers of each Section. Following is the quota allotment and Committee Sponsor for each Section:

Local Section	*Committee Sponsor*	*Quota*
Canadian	M. M. Todd	10
Florida	P. L. Ristroph	10
Indiana	J. B. Neff	10
Michigan	S. J. Levine	30
Mid-West	R. F. Gross	45
Missouri Valley	J. J. Feuchter	10
New England	R. M. Williston	30
New York	T. J. Fratar	40
Washington, D.C.	J. B. Ecker	40
Western	W. E. DeYoung	70

The States not specifically covered by a Section may be considered "open territory" for prospective candidates. For example, the Florida Section has all of the Southern and Southeast States with the exception of Oklahoma to use as *campaign* grounds. Other Sections bordering these States may also solicit membership therefrom.

It is anticipated that this membership drive will bring the Institute to *1,000 members*. The limiting date for the drive will be the 1953 Annual Meeting, *and include only those persons elected to membership by the Board* (including the Board meeting immediately preceding the Convention). By the time this announcement is published all members affiliated with Local Sections should have received detailed information from their Section officers. All members of the Institute, regardless of Local Section affiliation, are urged to participate in the drive. New members obtained by such individuals may be "allocated" to a specific Local Section by request of the particular member concerned.

At the end of the first month of the drive, 38 applications for new members were in the hands of the Institute's Membership Committee for processing. If this pace is maintained the drive will be a success. Additional details may be obtained by contacting any member of the Special Committee or the Executive Secretary.

Positions Available

DETROIT, MICHIGAN

ASSISTANT TRAFFIC ENGINEER

Graduation from an accredited engineering college, and some experience.

Minimum age limit—23.

SENIOR ASSISTANT TRAFFIC ENGINEER

Graduation from an accredited engineering college, and considerable experience.

Minimum age limit—24.

Address: Ralph Mueller, Head Personnel Examiner, Civil Service Commission, 735 Randolph Street, Detroit 26, Michigan.

CITY OF MIDLAND, TEXAS

TRAFFIC ENGINEER

To organize new department. Certificate from graduate level Traffic Engineering School or equivalent and some experience.

Address: Morris M. Howard, Assistant City Manager, Midland, Texas.

YOUNGSTOWN, OHIO

TRAFFIC ENGINEER

Minimum Qualifications:

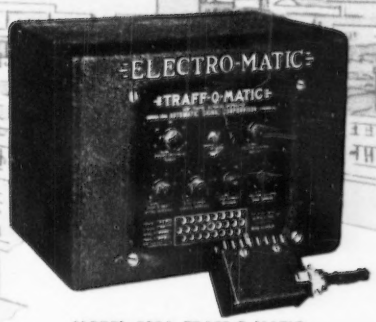
Graduation in engineering from an accredited college or equivalent experience and registration as a Professional Engineer. Specialized training in traffic engineering is preferred. Should have 4 years experience in traffic engineering with 1 year in responsible charge. Minimum age 25.

Address: Mayor Charles P. Henderson, City of Youngstown, Youngstown, Ohio.

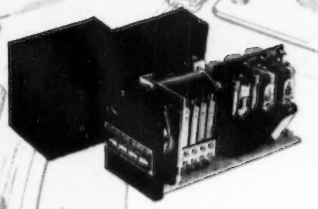
COORDINATION

Semi-actuated control with traffic selected cycle lengths and offsets

MASTER CONTROL



MODEL 505A TRAFF-O-MATIC DISPATCHER



MODEL MC3 LOCAL OFFSET UNIT

ELECTRO-MATIC ® TRAFFIC-ACTUATED CYCLE AND OFFSET SELECTOR SYSTEM sets up coordinated control of a series of semi-actuated intersections with automatic selection of cycle lengths and offsets to correspond at all times with actual traffic conditions with respect to volume and direction.

Sampling detectors at a key location on the arterial street send to the Master Control a continuous picture of changes in traffic volume. The Master Control unerringly selects the most effective background cycle length for the semi-actuated controllers in the system and smoothly makes it effective through local offset units which operate with the semi-actuated controller at each intersection.

Since the Master Control is always aware of the relative volume of traffic moving in both directions on the arterial street it automatically sets up throughout the system an offset pattern to favor inbound, outbound, or average traffic as required.

RESULTS? *Passage of maximum artery volumes — widest possible travel band — minimum running time — cycle length and offsets to fit* actual conditions — *efficient local semi-actuated control — minimum stopping and delay to all vehicles in the system* plus *increased safety.*

Send for our Bulletin E.B. 160 for detailed information.

TRAFFIC ACTUATED ®

Automatic Signal Division
EASTERN INDUSTRIES INCORPORATED
NORWALK, CONNECTICUT

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International Road Federation Briefs

Ontario (Canada) Plans Seven Major Construction Projects

George H. Doucett, Ontario Minister of Highways, has announced that several major construction projects will be started in the province to "meet this year's challenge of almost intolerable traffic congestion." The program will cost $16,000,000.

The new projects will be in addition to normal requirements of highway improvement and call for a minimum of seven million pounds of reinforcing steel.

Among the projects is one to complete Highway 17 from Ottawa to Hawkesbury as part of the Trans-Canada Highway. Approximately 17 miles of grading remain to be done on this section.

The Ontario government's decision to proceed with the extraordinary construction was made following a study of the over-all traffic picture in the province, which, it was found, is dominated by the fact that on June 30 of this year motor vehicle registrations had reached an all-time high of 1,182,961. The Ontario registrations account for a large part of the total registrations in Canada of nearly 3,000,000 units.

German Roads Association to Sponsor Traffic Engineering

The Forschungsgeselschaft für das Strassenwesen, in cooperation with the German Automobile Club and the Verkenhrswissino Chaftliken Institute of Cologne University, will establish a series of courses in traffic engineering this fall.

Iran Road Program Is Stalled

Road construction and most road maintenance has been at a standstill in Iran due to the great loss in revenue from oil production as a result of the nationalization of the industry. An application for a (U. S.) $25,000,000 Export-Import Bank loan, approved by the parliament in August 1951, is still pending. Six million of the $25,000,000 loan was to have been used for road machinery and construction. In June 1952, however, a project agreement for the development and improvement of highways was concluded by the U. S. Technical Cooperation Administration and the Iranian Ministry of Roads and Transportation.

Turkey Appropriates (U.S.) $16 Million For Highway Construction

The National Assembly of Turkey has voted an appropriation of T. L. 46.5 million (U. S. $16,800,000) for highway construction and maintenance this year. At the same time, the country applied for (U. S.) $3,500,000 additional aid from the U. S. Mutual Security Agency for purchase of road machinery to cover the period ending December 1953.

British Road Association Condemns Proposal To Impose Levy On Transport

The British Road Federation has condemned the government's proposal to impose a levy on road transport. The measure has been made part of the transport bill. Such a levy, the federation said, would put an additional strain on an industry already operating under a crushing burden of taxation. The proposed import amounts to penalizing one form of transport to subsidize another, has no precedent and is unjustified in principle, the federation added.

Pakistan Boosts Road Fund Allocation

The central road fund of Pakistan has been increased to (U. S.) $1,719,920 for the fiscal year 1951-52, nearly double the allocation for the previous year of (U. S.) $995,000. The fund, created in 1949, is financed from an excise and customs duty on gasoline. Eighty-five per cent of the fund is distributed among the provinces and cities and the remainder is spent on research and administration. The amounts allocated to date under the fund total (U. S.) $5,320,000.

East Bengal (Pakistan) estimates its road construction during 1952 will aggregate 995 miles, approximately the same amount of construction as the previous year. East Bengal's development program has as its goal the construction of a 6200 mile system of primary, district and feeder roads costing a total of 500 million rupees (approximately U. S. $100,000,000). In 1947, the province had only 500 miles of all-weather roads. East Bengal, at one time the most backward area, is becoming one of Pakistan's most progressive and modern provinces.

Kashmir Studies Road Tunnel Project

Kashmir has retained a firm of Swedish engineers to take test boring for a proposed tunnel through the Pir Panjal Kashmir range, linking Tather Valley with Munda Narr. The tunnel would shorten the distance between Jammu and Srinagar by some 40 miles. Specifications and design of the projects are to be prepared by the Swedish engineers.

Yale Bureau Luncheon

Over one hundred alumni and guests attended the Yale Bureau of Highway Traffic luncheon held at the Sherman Hotel in Chicago on September 9, 1952, during the Institute of Traffic Engineers Annual Meeting.

The alumni group consisted of graduates of both the Harvard Bureau of Street Traffic Research and the Yale Bureau of Highway Traffic. The Traffic Bureau originated at Harvard in 1927 and was moved to Yale in 1938.

Mr. A. L. Forde presided at the informal meeting following the luncheon. Mr. Forde and Mrs. S. T. Siegel were the co-chairmen of the local committee in charge of arrangements for the luncheon.

At the meeting Mr. T. M. Matson, Director of the Bureau of Highway Traffic, briefly outlined the activities of the Bureau. He reported that the Bureau has over 300 graduates and a current class of twenty-one men. Among the changes in the Bureau course to keep abreast of the rapidly developing traffic engineering field, Mr. Matson mentioned increased emphasis on statistical methods and the development of textual materials on Traffic Engineering.

The alumni group at the luncheon voted to form an informal alumni association to be known as "The Yale Highway Traffic Alumni Association." Mr. R. S. Holmes, Deputy Director, Engineering Service Division, Federal Civil Defense Administration, Washington, D. C., was selected chairman for the coming year. The next meeting of the newly formed Alumni Association will be held at the next annual meeting of the Institute of Traffic Engineers in Buffalo.

Illinois Traffic Engineering Conference Set

The Fifth Annual Illinois Engineering Conference will be on campus at the University of Illinois, Urbana, on December 11 and 12. The conference is sponsored by the Department of Civil Engineering of the university in cooperation with the Illinois Division of Highways, the Midwest Section of the Institute of Traffic Engineers, the Illinois Traffic Safety Council, and the Illinois Municipal League.

Inquiries and requests for additional information may be addressed: R. K. Newton, Supervisor, Engineering Extension, 713½ South Wright Street, Champaign, Illinois.

New Appointments . . .

In April of this year, J. Edward Johnston, Member of the ITE Board of Direction, resigned his post as Traffic Engineer, Department of Roads and Irrigation, State of Nebraska, to become Manager of the Highway Division of the American Automobile Association, at the national headquarters in Washington, D. C.

J. E. Johnston

Mr. Johnston brings to his new position long experience in the State Highway field. He joined the Engineering Division of the Nebraska Department in 1925 and worked his way up through various posts of increasing responsibility. The Department created a Traffic Engineering Division in 1939 and the end of the following year found him appointed State Traffic Engineer, after he had completed the Traffic Engineering course at the Yale Bureau of Highway Traffic in June 1940. During his 11 years of tenure in that post he was active in the organization of a State Safety Council and the conduct of a State-wide educational program for the use of uniform warrants in the application of traffic control devices. He has served on many of the AASHO, National Safety Council and Highway Research Board Committees and participated in the preparation of several notable reports. He was the principal author of the AASHO Policy on Open Air Theaters.

Traffic Engineering has delayed its notice of Mr. Johnston's appointment in the hope that he would supply details, which he has steadfastly refrained from doing, undoubtedly because of his extreme modesty. Consequently, the editor has relied on the ITE personality sketch which appeared in September 1951 Traffic Engineering.

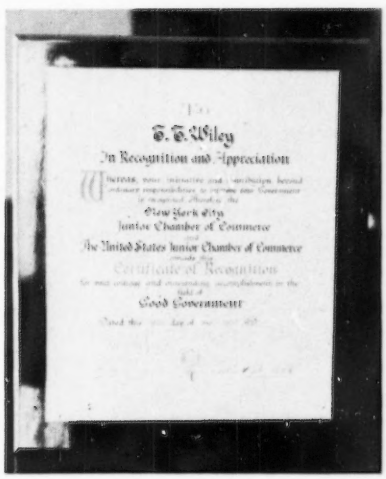
Mayor Impellitteri appointed T. T. Wiley (Mem., ITE) as Traffic Commissioner of New York City on August 19th. Wiley had been Acting Traffic Commissioner since June 1951 when former Commissioner Lloyd B. Reid (Mem., ITE) resigned.

T. T. Wiley

Wiley joined New York City in April 1949 as Executive Director of the Traffic Commission after eleven years of service with the Detroit Traffic Engineering Bureau where he did an outstanding job in supervising the modernization and expansion of the traffic signal system. Many of the principals now regarded as standard signal practice were developed in Detroit during this period. Prior to his Detroit service Wiley spent three years with the traffic engineering section of the Illinois Division of Highways.

True to his real love, immediately following his appointment Wiley announced a $1,800,00 two-year traffic signal modernization and expansion program for New York City. The program includes new pedestrian signals, new controllers for flexible progressive systems, new signals and signalization of many additional intersections.

An outstanding honor was accorded Mr. Wiley in May of this year when he was selected by the New York Junior Chamber of Commerce to receive its "Man of the Year" award in the field of Good Government. A cut of the award plaque is pictured on this page.



Robert L. Meyer (Assoc. Mem., ITE) has been appointed Traffic Engineer by the Nebraska Department of Roads and Irrigation. Mr. Meyer replaces J. Edward Johnston who resigned in the early part of the summer. Meyer has been employed by the Department since 1946 in the Traffic Engineering Division.

He is a graduate in engineering of the University of Nebraska, and in 1951 completed the Yale Bureau of Highway Traffic course.

The Division he heads performs nearly all of the functions which an ideal state traffic engineering organization should perform. The Division furnishes traffic engineering services to any city, town or village in Nebraska, is consulted on all matters of geometric design, determines accident prone location treatments, establishes all speed zones, is responsible for all traffic control devices, operates the sign shop and pavement marking activities, and includes the State's Accident Record Bureau.

ITE Calendar

24th ANNUAL MEETING

Hotel Statler
Buffalo, N. Y.

Sept. 27 - Oct. 1, 1953

25th ANNUAL MEETING

Kansas City, Missouri
September, 1954

SECTION NEWS

Western Section

At the time of the meeting of the 23rd Annual ITE Conference it was agreed that the National Chapter should attempt to increase its membership to a total of one thousand members. The Western Section, with by far the largest number of members, was given the largest quota to fill. We are expected within the next year to increase the Western Section membership by seventy. All prospective members who qualify should be contacted and invited to join the Institute. Application forms are in the hands of all area chairmen of the Section and are available upon request.

1953 Meeting

It is tentatively planned that the 1953 annual meeting of the Western Section ITE will be held in Seattle on May 21st and 22nd in conjunction with the Northwest Traffic Engineering Conference.

Resignation

"I am resigning from the ITE and Western Section because of advancing age and I am no longer in the Traffic Engineering field. I have enjoyed meeting many of the members at the Los Angeles meetings during 1950 and 1951, but there comes a time when one has to let up a little and that time seems to be now. My kindest regards to all my friends, and I am sure that the Western Section Institute of Traffic Engineers will do more and more as the years go by in gaining recognition of the importance of Traffic Engineering." Signed, Clyde Myers (Arizona Highway Department).

The best wishes of the Western Section go to Mr. Myers, and we are sorry to lose him as a member.

From California

The staff of Guy MacDonald, Traffic Engineer for Los Angeles County, put finishing touches on a deficiency survey covering the county Primary and Secondary highway system—45 miles in all. All roads were examined for traffic capacity, sight distance, structural conditions, etc. Approximately one thousand manual counts were taken, each for the same 5-minute period over 6 consecutive hours; these figures were then expanded to show average daily traffic figures. Machine counts at key points supplement these figures. At times, as many as 14 engineers and aides were employed full-time on this project, which took three months to complete. An advance report of the results discloses a deficiency in the county highway system whuch would cost an estimated 75 million dollars to correct. It is anticipated that this survey will prove invaluable in future traffic planning and in determining priority for highway constructions.

Al Hutchison, District Traffic Engineer for the State Division of Highways, reports that a recent 16-hour count on the Hollywood Freeway showed 102,000 vehicles using the 8-lane facility during that time.

Tim Hardy has joined Ralph Dorsey's staff in the City of Los Angeles. It is understood that he will share the more difficult assignments with Hugh Gilman and Gordon Prather, who have recently been promoted.

B. A. Switzer from Sacramento reports that Governor Warren called a "California Traffic Safety Conference" on October 2nd and 3rd. An ITE dinner was sponsored and held on the night of October 2nd and there were about 120 persons, most of these were Traffic Engineers, City Engineers and similar officials. ITE Director, Joe Havenner, presented the Past Presidents' Award to Ed Hall of San Diego. The principal address of the evening was given by M. R. Darlington, Jr., Manager-Director, Inter-Industry, Highway Safety Committee, Washington, D. C.

Jake Young, former State Highway Traffic Engineer, now Design Engineer, is in the Sutter Hospital for an operation on his back. He is doing well and is able to have company.

D. J. Faustman is trying out an all pedestrian interval at two intersections in Sacramento. Ross Shoaf is planning to try out a similar system in San Francisco.

Position Available

Mr. James K. Gibson, Supervising Transportation Engineer for California Public Utilities Commission, reports that they have a job open for an Assistant Engineer. Applicants should have a college degree in engineering and two years of operating or engineering experience with a transportation agency or a regulatory body. The engineering experience may be substituted for the college degree on a year for year basis. The salary starts at $395 per month and is increased each year until a top of $481 per month is reached. Applicants must have been residents of California for at least one year. Anyone interested in this position can obtain application blanks or further information at the San Francisco or Los Angeles office of the Public Utilities Commission.

From Sacramento

Jack Faustman reported from Sacramento that the City Council recently gave preliminary approval to a program to extend their one-way street system to encompass all of the east-west streets in the Central Business District. It is interesting to note that this move was taken at the request of downtown merchants, and that at public hearings on the matter there was absolutely no opposition.

Sacramento is planning a test of the Denver "Scramble" System of providing separate pedestrian intervals at downtown intersections.

From Berkeley

Don Berry has recently returned from a two months' stay in Sacramento where he was working on a rural capacity analysis in connection with rating deficiencies on the state highways in California. He also spent some time in Seattle during the latter part of September setting up a Civil Defense Traffic Control School.

Denver Reports

Henry Barnes, progressive Traffic Engineer of the City of Denver, states that while on a tour of the West Coast from Seattle to Los Angeles he was much impressed by the highway work being done. He further adds that it is true that the West Coast does not have the Denver "mechanical brain," but they do have a few freeways and some off-street parking that he would like to have.

Henry is now recuperating from a leg operation he had recently, and apparently is getting very little sympathy as the consensus of local opinion is that he was injured crossing on a green light rather than a walk signal.

Ed Cleary, former Traffic Signal Construction foreman for the Denver Traffic Division, has accepted a position with Leslie Williams as Traffic Signal Engineer for the City of Philadelphia.

The Colorado Highway Department, as reported by A. R. Pepper, Traffic Engineer, has prepared and issued a manual on Uniform Traffic Control Devices for streets and highways. The manual was developed and distributed by the department's Traffic operations System of which Al is the Section head, and was approved and adopted by the Colorado State Highway Commission for release to all counties and munici-

palities in the state. Release of the manual was approximately timed to follow the issuance of the Model Traffic Ordinance for Colorado Municipalities published earlier this year by the Colorado Highway Safety Council.

New Arrival—Late Announcement

Luke Merriam has another baby girl—the third red-headed youngster in the family. She is Barbara Allen, born July 18th.

Phoenix

Wayne Morris, Traffic Engineer, returned recently after an enjoyable visit in Mexico City. Wayne and his family spent the whole month of August down with the Senoritas south of the border.

Chuck Haley and Jack Hanno, Phoenix Traffic Engineering Division, both spent their vacations building patios during a time when the temperature was running between 110° and 115° in the shade. What price patios?

Glen Smoot has been appointed Safety Education Director of the Maricopa County Highway Department. Maricopa County is the most heavily populated county in the State of Arizona and in which is located the City of Pheonix. The Western Section wishes success to Glen in his new position.

Oregon Reports

Lee Kies who has been in charge of Accident Analysis in Oregon, is leaving for a year's graduate work, ITTE, at the University of California, and Larry Thompson will take over Lee's work while he is gone.

Al Head combined a two weeks' vacation junket with the recent Western Section meeting spending some time in Sacramento, Turlock and Yosemite.

J. Blair has recently completed two terms of office as president of the Association of Engineering Employees of Oregon, and did a very excellent job during his tenure of office. Jay is Road Inventory and Map Engineer with the Oregon Planning Survey Section.

Bud George, Harry Esch, and Val Johnson have been spending the majority of their time working up signal and one-way street projects throughout the state.

Washington Reports

Rex Still, State Traffic Engineer, is spending a lot of his time these days on limited access hearings.

E. E. Lewarch, Seattle's Traffic Engineer, reports that Seattle too has tried out the "Scramble" System (all pedestrian interval) and that it is working well.

R. G. Bates and his wife visited briefly with friends in Seattle and Olympia enroute from Bismarck, North Dakota, to Nevada via California.

Bob Dunn recently completed a two-weeks course on Civil Defense which was held in Seattle.

Win Carsten hit the jackpot on fishing and hunting recently, catching a 41½-pound King Salmon one week and getting a nice buck deer the next.

Ted Forbes, formerly with Yale Traffic Bureau, made a tour with his wife through Washington enroute to California. Ted is now with the Committee on Highway Safety Research, National Research Council, National Academy of Sciences.

Engineers Centennial

Bill Stockdale from Spokane reports that the ITE received recognition as one of the 18 sponsoring organizations of the Engineers Centennial held in Spokane September 30 through October 4. The fact that Bill was on the central committee suggests strongly the reason for the recognition.

Third Annual Highway Planning Conference

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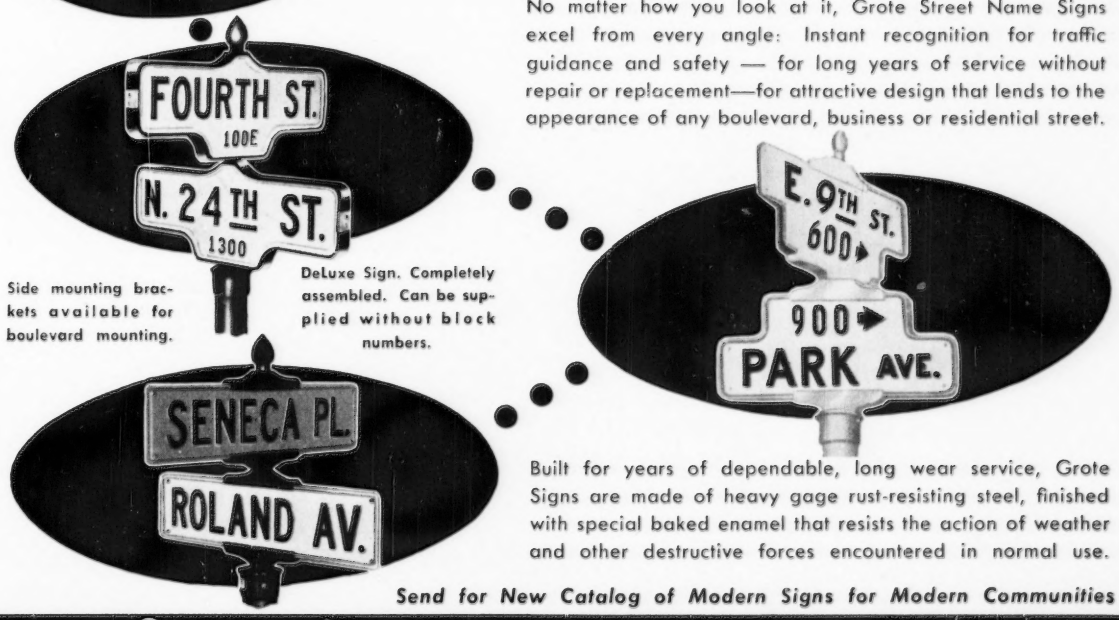

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way Officials sponsored the Third Annual Highway Planning Conference held in Seattle on October 9 and 10. It was a highly interesting and educational session, highlighted with speeches by H. S. Fairbank and E. H. Holmes (Mem., ITE) of the Bureau of Public Roads, Washington, D. C. There were 112 persons in attendance for the two-day meet, including ITE members: R. G. Bates, J. W. Blair, J. W. A. Bollong, W. H. Carsten, B. R. Culver, G. R. Cysewski, J. A. Gallagher, J. Al Head, Norm Kennedy, E. E. Lewarch, K. A. MacLachlan, M. R. Mitchell, J. K. Mladinov, Roy Sawhill, R. H. Warr.

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Reported by W. H. Carsten
Secretary-Treasurer

Washington, D. C., Section

The Section has completed its schedule of meeting dates for the coming year. The first meeting was held October 29, with J. Edward Johnston, Member of the ITE Board of Direction, giving a report on the 23rd Annual Meeting of the Institute held in September in Chicago.

All meetings this year will be held at the Army and Navy Club, Farragut Square and I Street, N. W., Washington, D. C. The schedule is: December 3, January 14, February 25 (ladies night and special entertainment), April 8, May 20 (annual business meeting), and June 27 (summer outing). The January 14 meeting will be held at the same time as the Highway Research Board annual meeting and we especially invite all out-of-town traffic engineers and their guests to meet with us and hear Edmund Ricker, traffic engineer of the New Jersey Turnpike, discuss traffic operations on that new facility.

Reported by Henry K. Evans
Secretary-Treasurer

New England Section

The first fall meeting of the New England Section of Institute of Traffic Engineers was held in New Haven on October 28, 1952. A total of 74 members and guests gathered for the social hour and dinner.

The guest speaker for the occasion was Dr. G. Albert Hill, Connecticut State Highway Commissioner, who spoke on "The Relocation of Route U. S. No. 1." The business portion of the meeting was opened by President Hugh Wynn who announced that the National ITE had indicated that the quota for the New England Section in the National ITE 1952-53 membership drive would be 30 members. In line with this, Executive Secretary Tim Todd gave a brief description of the requirements for National ITE membership. Vice-President Robert Williston has been appointed as the Section coordinator for this membership drive. His duties will also involve a program for enlarging the membership of the New England Section.

President Wynn appointed a committee consisting of Chairman Bob Mitchell, Connecticut; Wally Gove, Massachusetts; and Roger Chandler, Rhode

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Island, to consider possible amendment of the Section's Constitution.

The Secretary-Treasurer announced that the next Section meeting would be held December 16th in Springfield, Mass., and that the guest speaker would be Edgar F. Copell, Boston Metropolitan District Commissioner. Mr. Copell was formerly Traffic Engineer for the Massachusetts Department of Public Works and has been a long-time member of the ITE. He will speak on "Shopping Centers."

David Johnson of the Connecticut Highway Department, Program Chairman for the evening, made the introduction of Dr. G. Albert Hill. Commissioner Hill, who is not new to the New England Section ITE members, gave a 30-minute talk on some of the problems involved in the proposed construction of a controlled access highway to be known as the relocation of Route U. S. No. 1 from the New York State line to the Housatonic River. As presently planned, the highway wil be approximately 40 miles long and will cost about $120,000,000. Interchanges will be provided for at each of the towns to be built when and as the need arises.

Dr. Hill indicated that the public relations problem for such a proposal is extremely difficult due to the sometimes unfair attacks made by forces opposing the construction of such a highway. Approximately 2900 families are to be affected by the proposed route development. Opponents to the plan, however, frequently quote much higher numbers. After Commissioner Hill concluded his 30 minute presentation, an active question and answer session kept the meeting lively for another hour.

If the first fall meeting is any criterion, the New England Section is beginning its most interesting season.

Reported by Earl H. Flynn
Secretary-Treasurer

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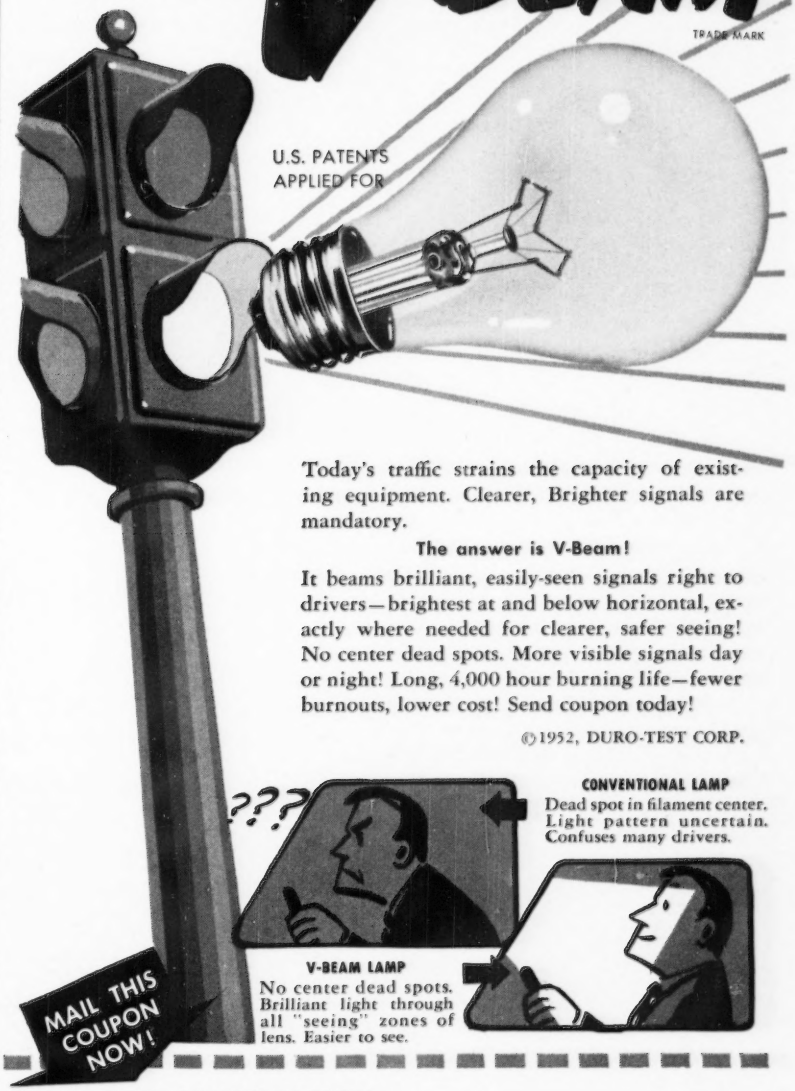

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Adrian, Michigan. State Highway Department. Planning and Traffic Division.

The Adrian Area Traffic Study; Street Traffic and Trunkline Report. The Department, in cooperation with the City of Adrian and the U. S. Bureau of Public Roads. 1952. 65pp.

First of the Reports to be made to present the results of the traffic study. A suggested arterial street plan and the trunkline street plan are presented with tabular material.

Automobile Manufacturers Association.

Automobile Facts and Figures. The Association, 1952. 32nd edition.

New edition of this annual statistical report.

Bethlehem, Pennsylvania.

Traffic and Parking Survey Report for South Bethlehem, Bethlehem, Pennsylvania. Gannett Fleming Corddry & Carpenter, Inc., engineers, 1952. 45pp.

A detailed study of traffic and parking conditions in South Bethlehem during the last six months of 1951 containing findings and recommendations for corrective measures.

Blair, Roy T.

Honor System Parking. Honor System Parking, Inc., San Diego 4, California. 1952. 5pp.

A new and original idea for off-street parking whereby automobiles can be parked in unattended stalls and tokens are used in lieu of coins.

Burlington, Vermont. City Plan Commission.

Report, 1952. Technical Planning Associates, Inc., New Haven, 1952. 41pp.

A Preliminarly Survey of the city together with the Commission's actions and recommendations during the past year.

California Roadside Council.

Roadside Protection in California; a Handbook for Local Action. The Council, San Francisco, January, 1952. 60pp.

Contents: Section I—The roadside problem. Section II—A basic county zoning ordinance; The Los Angeles freeway-protection ordinance—an

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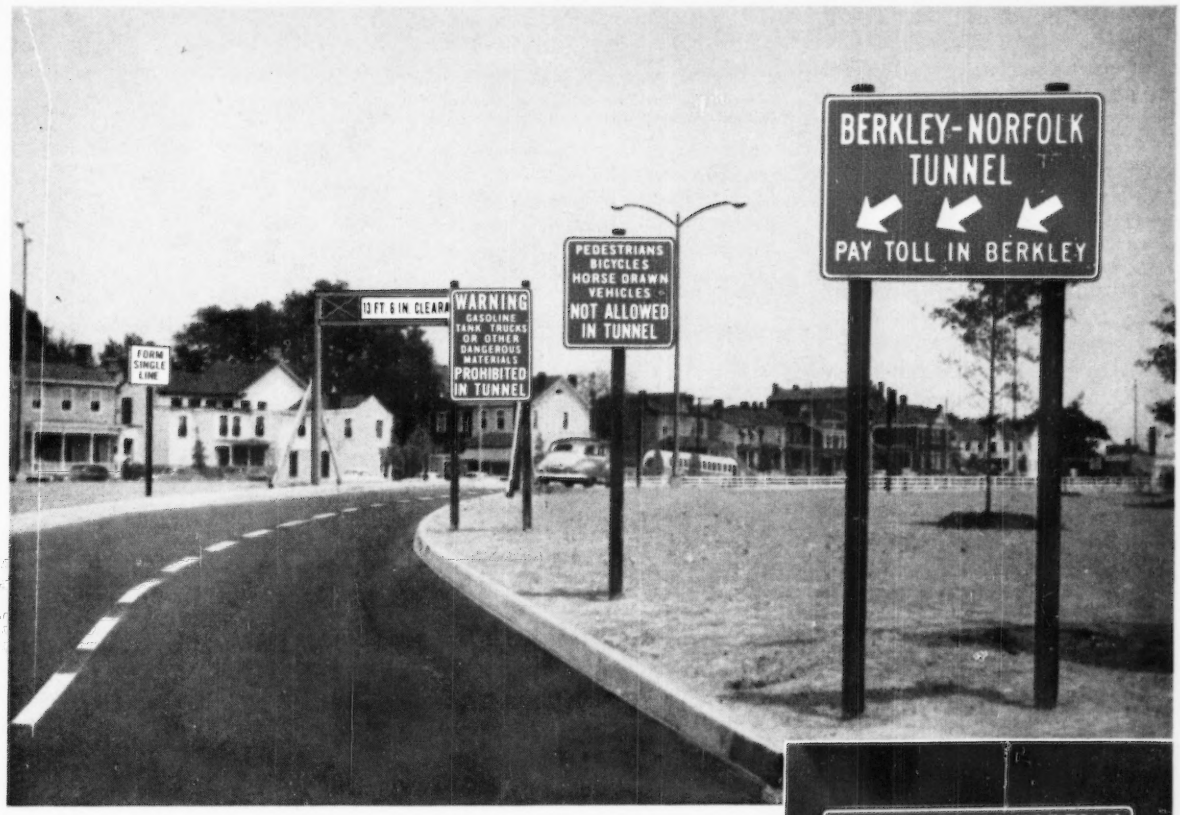

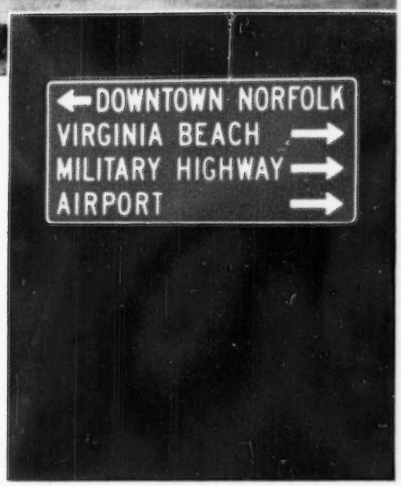

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amendment to the existing zoning code. Section III—List of counties which have planning commissions, zoning ordinances, draft of petition to adopt zoning ordinance with special reference to roadside protection, example of circular letter enlisting citizen support, and report on retroactive zoning—the legal principle and its application.

Chamber of Commerce of the United States.

Transportation Policy Adopted by the Membership of the Chamber. The Chamber, 1952. 13pp.

Policy declarations dealing with many domestic, international and local transportation problems and aimed towards development of a sound national transportation system.

Charlotte, North Carolina. Traffic Engineering Department. Parking Authority (City).

Improvement Plan for Parking Facilities. The Department, 1952. 29pp.

A survey of parking facilities and needs prepared during 1951 by the Department.

Davis, Harmer E.

Some Patterns and Issues of Highway Transportation. Institute of Transportation and Traffic Engineering. A paper prepared for presentation as the Fourth Annual Salzberg Memorial Transportation Lecture, Syracuse Univ., 1952. 20pp.

A development of the economic and sociological aspects of highway transportation.

Denver, Colorado. Association of Building Owners and Managers.

Pedestrian Traffic in Downtown Denver. The City and University of Denver Reports, Bureau of Business and Social Research and College of Business Administration. (Business study No. 119, Vol. 27, No. 2, August, 1951). 1951. 6pp.

Report shows the decline of approximately thirteen per cent in pedestrian traffic in downtown Denver from 1947 to 1951. The development of outlying shopping centers, accentuated by vehicular traffic congestion in the central business district together with increased use of the automobile for shopping purposes, has undoubtedly contributed materially to this decline.

Elmira, New York. Department of Public Works (State).

Report on State Arterial Route Plans in the Elmira Urban Area. The Department, in cooperation with the United States Bureau of Public Roads. 1951. 81pp.

The report for the city and its environs contains a recommended General Plan for arterial route improvements within the area and describes in considerable detail extensive traffic and planning studies.

Eureka, California. Department of Public Works. Division of Highways.

Traffic Survey of U. S. Route 101 in the City of Eureka. The Department, 1951. 41pp. (Cover reads: Eureka Traffic Survey 1951).

An analysis of the traffic situation along the State highway in Eureka with recommendations for remedial measures to relieve congestion.

Giles, C. G.

Skidding and the Slippery Road. The Institution of Engineers and Shipbuilders in Scotland, 1952. (Reprint paper No. 1152 from the Transactions of the Institution, 1951).

The paper gives the results of investigations into the effect of vehicle, tire, and road surface characteristics on skidding. Methods of measuring the friction between tire and road are described and results obtained under different conditions are given. The connection between types of road constructions, road surface texture, tire tread pattern and skidding resistance on wet roads is discussed and suggestions are made as to the way

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Glens Falls, New York. Department of Public Works (State).

Report on State Arterial Route Plans in the Glens Falls Urban Area. The Department, in cooperation with the United States Bureau of Public Roads. 1952. 84pp.

A general plan for highway and arterial route improvements designed to meet current problems and additional traffic requirements. Describes in detail extensive traffic and planning studies.

Tucson, Arizona. State Highway Department.

A Street Arterial Plan for Tucson, Arizona. The Department, in cooperation with the City of Tucson and Pima County and the U. S. Bureau of Public Roads, 1952. 96pp.

This report covers the procedure and analysis of the Tucson metropolitan area origin-destination traffic survey made by the Arizona Highway Department during the period of February-April, 1948. The report was compiled in 1950 and published in 1952.

It presents an arterial street plan for consideration by the governmental agencies concerned with the solution of the traffic problems of Tucson and vicinity.

Klamath Falls, Oregon. State Highway Department. Traffic Engineering Division.

Traffic Survey Report City of Klamath Falls. The Department, in cooperation with the U. S. Bureau of Public Roads. 1952. 143pp.

A thorough study of present traffic volumes and the ability of existing state highways and arterial streets to adequately care for present and future traffic. It explores several alternate possibilities for the routing and handling of existing and future traffic.

Los Angeles, California. Traffic Survey Committee.

Three Years of Progress in Street Traffic Management. The Committee, 1952. 55pp.

Supplementary to Street Traffic Management for Los Angeles, 1948, a summary of the 1948 findings and recommendations of the Traffic Survey Committee; an appraisal of progress to date and a legal analysis of present street and traffic administrative responsibilities.

Louisiana. Department of Highways.

Sixteenth Biennial Report; Statistical and Technical Supplement. The Department, 1951. 185pp.

This supplement is a detailed account of the activities of the Department for the calendar years 1950 and 1951. It has been prepared as a permanent record for the Department's engineers and other state officials, who require detailed information on the operation of the Department of Highways.

Louisiana. Department of Highways.

Two years of Highway Progress; a Non-Technical Report. The Department, 1950-1951.

Marin County, California. Planning Commission.

Streets and Highways Plan. The Commission and Road Commissioner, 1952. 145pp.

The first and major portion of this study has been devoted to a detailed presentation of basic data. The last four chapters offer recommended solutions and acts as a broad guide to a planned program of improvements and expansions of the road system. Contents: History, Physical characteristics, people, economic factors, land use, streets and highways, road characteristics, traffic, highway design, highway financing and administration, road classification and standards, future development, streets and highway plan and details.

Mogren, Edward C., and Smith, Wilbur S.

Zoning and Traffic. The Eno Foundation for Highway Traffic Control, Inc., 1952. 160pp.

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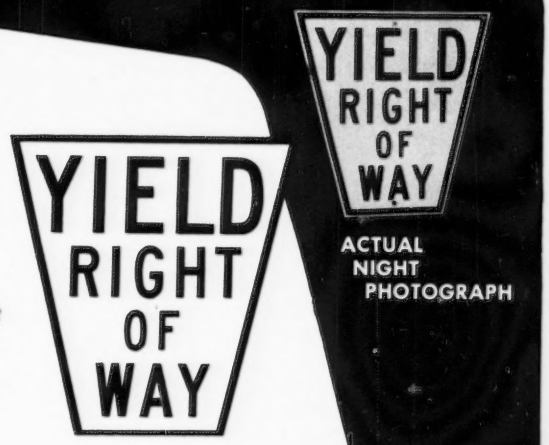

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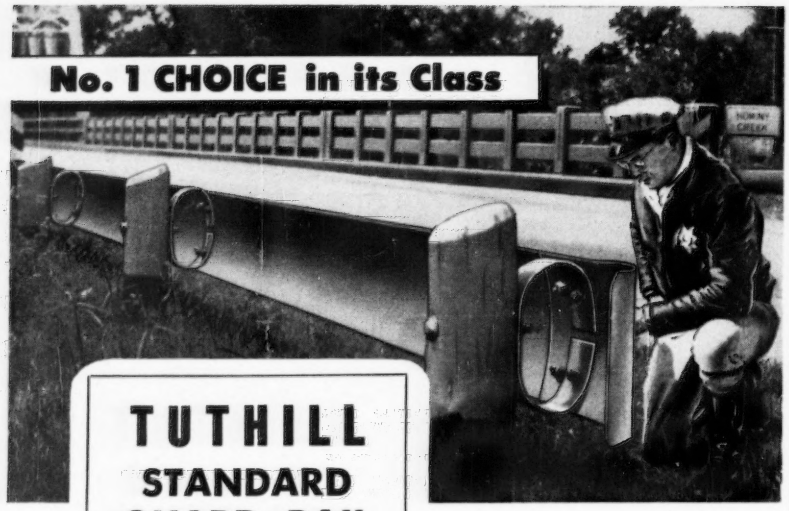
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A survey of zoning requirements of cities for parking and loading.

Moffie, Dannie J.; Alexander, Carlton; Parker, James.

The Influence of Personal and Psychological Characteristics on the Accident Experiences of Tractor-Trailer Drivers. North Carolina State College, School of Education, Department of Psychology. The Department, 1952. 38pp.

This study was completed as part of a contract research with the McLean Trucking Company, Winston-Salem, North Carolina, to determine the relationships of personal and psychological traits to driver performance in terms of accident rates, and to recommend suitable psychological tests for the establishment of a psychological testing program in the company.

National Highway Users Conference.

Proceedings of the Fourth Highway Transportation Congress; Adequate Roads for a Stronger America. The Conference, May, 1952. 69pp. $1.00.

National Safety Council.

Accident Facts. The Council, 1952 edition. 96pp.

A new edition of the annual statistical report presenting a detailed analysis of accidents.

New York. State Traffic Commission.

Annual Report of the State Traffic Commission, 1951. The Commission, 1952. 32pp.

Newark, New Jersey. Bureau of Municipal Research.

Parking in the Newark Central Business District, 1951. The Bureau,1952. 44pp.

A comprehensive study of the parking situation. It includes an inventory of present off-street parking facilities and future space requirements.

Oregon. State Highway Department.

Traffic Volume Tables for 1951. The Department, in cooperation with the U. S. Bureau of Public Roads. 1952. 91pp.

This publication contains a summary of vehicular traffic volumes obtained by automatic recorders at various locations on the State Primary and Secondary Highway Systems and on the Federal Aid Secondary Highway System.

Oregon. State Highway Department. Traffic Engineering Division.

Traffic Survey Report City of La Grande. The Department, 1952. 113pp.

A study to determine the potential pool of traffic that is divertible to a bypass route around the city for the installation of traffic signals.

Port Angeles, Washington. Department of Highways (State).

Origin and Destination Traffic Survey of Port Angeles, Washington. The Department, in cooperation with the U. S. Bureau of Public Roads and the City of Port Angeles, Department of Public Works. 1952. 81pp.

The report is primarily a compilation of traffic facts provided through an origin and destination survey conducted during the summer of 1950 and was designed to provide these facts from which sound recommendations would evolve for an improved transportation system.

Sacramento, California. Traffic Engineer.

Improving Traffic Access Into Central Business District. Traffic Engineering Department, 1952.

Supplement No. 2, a study of the technical, engineering and financial problems involved in various methods of improving access to the central business district.

Salamanca, New York. Department of Public Works (State).

Report on State Arterial Route Plans in the Salamanca Urban Area. The Department, in cooperation with the U. S. Bureau of Public Roads. 1951. 61pp.

Contains a recommended General Plan for arterial route improvements within the area and describes in considerable detail the extensive traffic and planning studies upon which it has been predicated.

Saratoga Springs, New York. Department of Public Works.

Report on State Arterial Route Plans in the Saratoga Urban Area. The Department, in cooperation with U. S. Bureau of Public Roads. 1952. 81pp.

Contains the basic data in detailed analysis for the general plan of arterial route improvements with recommendations.

Welch, West Virginia. State Road Commission. Planning Division.

Traffic Survey Report of Welch, West Virginia. The Commission, in cooperation with U. S. Bureau of Public Roads. 1952. 47pp.

A report of the survey made in July 1951 to ascertain the origins and destinations of traffic entering, leaving, or passing through the central business district through the internal cordon interview method.

Secretary's Column

In my annual report at the Chicago meeting I mentioned that on September 7th the Board had extended its first invitation to a firm to become a Sustaining Organization of the Institute. I have since been surprised to learn of the amount of interest in this matter, and how little is known of the provisions of Article XI of our By-Laws.

Members have asked "Has such and such firm applied for Sustaining Organization membership yet?" The question is wrong on two counts. First, a Sustaining Organization is not a member of the Institute nor is there any connotation of membership involved. It is perfectly true that the Sustaining Organization's (firm) official representative's name will be listed in the Yearbook and he will receive all of the Institute's publications including the magazine, newsletters, etc. However, he has no vote, nor do the firm's designated advisors to the Technical Committee have votes. Only individual engineers duly elected by the Board upon proof of their qualifications are members of ITE. A Sustaining Organization together with its official representatives is a *friend* — and an exceptionally good friend—of ITE, but cannot be a *member*.

Second, a firm must be *invited* to become a Sustaining Organization so there is no question of an *application*. Before extending its invitation, the Board of Direction must first receive a written recommendation signed by two voting ITE members (Member or Associate Member). A form procedure has been prepared for this purpose, whereby a member wishing to suggest some group for invitation sits down with a representative of the organization and discusses the privileges and obligations of a Sustaining Organization, which are set forth in Article XI. The member then completes a form directed to the Board of Direction which lists the group's interest or relation to the traffic engineering field; the name of its representative to be; names of the three Technical Committees to which the organization could offer counsel, and the name of the advisor that could be designated for each; and a confidential evaluation of the Organization's desire and interest to sustain and further the objectives of the Institute.

After the signatures of both sponsoring members are added a single copy of the recommendation is to be forwarded to Headquarters for consideration during the next meeting of the Board. Each sponsor will be advised of the Board's action.

A certificate in form comparable to that furnished ITE members—reading, THIS IS TO CERTIFY THAT * * * IS A SUSTAINING ORGANIZATION OF THE INSTITUTE OF TRAFFIC ENGINEERS FOR 195* AND FULLY ENTITLED TO ALL THE PRIVILEGES GRANTED BY THE BY-LAWS—signed by the President and Secretary-Treasurer will be furnished to each Organization which accepts the Board's invitation. This certificate will be issued each calendar year on an automatically renewable basis. Certificates issued between now and July 1953 will be for the calendar year 1953; certificates prepared after July will be for the following calendar year.

It is not contemplated that organizations whose activities are limited to less than the major sectional areas of the nation will be invited to become Sustaining Organizations. An inquiry to Headquarters will bring any voting member full information on how to suggest groups that should receive invitations.

Thus far, four invitations have been extended and there is one recommendation for Board consideration. I regret to report the lack of receipt of a recommendation for many of the organizations who have long supported the Institute, some of which have been friendly ever since ITE was founded. These organizations have made direct financial contributions on occasion and/or have supported Annual Meeting Funds; many are long time advertisers in our magazine. It seems to be a case of each member assuming that some other member has taken steps to see that these friends are invited, the result being that no one makes a recommendation to the Board.

It must be remembered that it would be most embarrassing if because of a "let George do it" attitude it became necessary for an ITE member to recommend that his *employer* be extended an invitation. Let's make sure this doesn't happen by each one writing Headquarters suggesting the name of an organization he would sponsor. Don't worry about duplications, which we will take care of, and remember that while each recommendation must have at least two sponsors there is no limit on the number of members recommending a single organization, or on the number of organizations sponsored by any single member.

TIM TODD

LOOKING AHEAD

NOVEMBER 17-20, 1952—CHICAGO, ILLINOIS
Annual Meeting, American Association of Motor Vehicle Administrators, Sheraton Hotel.

NOVEMBER 19, 1952—NEW YORK CITY
34th Annual Meeting, American Standards Association, Waldorf Astoria Hotel.

NOVEMBER 30-DECEMBER 5, 1952 — NEW YORK CITY
Annual Meeting, American Society of Mechanical Engineers, Hotel Statler.

DECEMBER 1-3, 1952—LOS ANGELES, CALIF.
Annual Meeting, American Municipal Association, Hotel Statler.

DECEMBER 10-12, 1952—KANSAS CITY, MO.
Annual Meeting, American Association of State Highway Officials, Muehlbach Hotel.

JANUARY 12-16, 1953—WASHINGTON, D. C.
Annual Meeting, Highway Research Board, Academy of Science Building.

MARCH 1-3, 1953, ATLANTA, GEORGIA
Annual Meeting, Southern Safety Conference and Exposition, Hotel Atlanta Biltmore.

JUNE 29-JULY 3, 1953—ATLANTIC CITY, N. J.
Summer General Meeting, American Institute of Electrical Engineers.

AUGUST 10-12, 1953—LOS ANGELES, CALIF.
Annual Meeting, American Transit Association, Hotel Biltmore.

SEPTEMBER 14-18, 1953—NEW YORK CITY
Annual Meeting, Illuminating Engineering Society, Hotel Commodore.

SEPTEMBER 28-OCTOBER 1, 1953—BUFFALO, N. Y.
24th Annual Meeting, Institute of Traffic Engineers, Hotel Statler.

OCTOBER 5-8, 1953—COLUMBUS, OHIO
58th Annual Meeting, International Municipal Signal Association, The Neil House.

STAMP COLLECTORS

Ted Siegel has sent Headquarters a "First Day Cover" of the Centennial of Engineering stamp. The envelope bearing the 3 cent stamp postmarked Chicago, September 6th also has attached a 23rd Annual Meeting seal. Ted has about 3 dozen of the covers available for a small fee. ITE philatelists may write Stanley T. Siegel, Traffic Engineer, Bureau of Street Traffic, City of Chicago.

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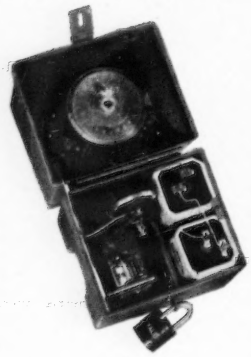

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